SONY

MHC-H1600

MODEL

SERVICE MANUAL

TC-H1600

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model

SONY
AUTO REVERSE
A
AUTOMATIC TAPE SELECTOR
B
COUNTER DISPLAY
RESET
DOLBY NR
DIRECTION MODE
EJECT
START
PAUSE
REC
DECK A
DECK B

This set is the deck section in MHC-H1600, FH-E636CD.

Model Name Using Similar Mechanism	TC-WR520/WR520S	
Tape Transport Mechanism Type	DECK A	TCM-190RA12A
	DECK B	TCM-190RB22A

SPECIFICATIONS

Cassette Deck Section

Recording system	4-track 2-channel stereo
Frequency response	(DOLBY NR OFF) 40 — 13,000 Hz (±3 dB) using TYPE I cassette (Sony HF-S) 40 — 14,000 Hz (±3 dB) using TYPE II cassette
Wow and flutter	0.1% WRMS ±0.3% (DIN)

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MICROFILM

STEREO CASSETTE DECK

SONY®

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Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

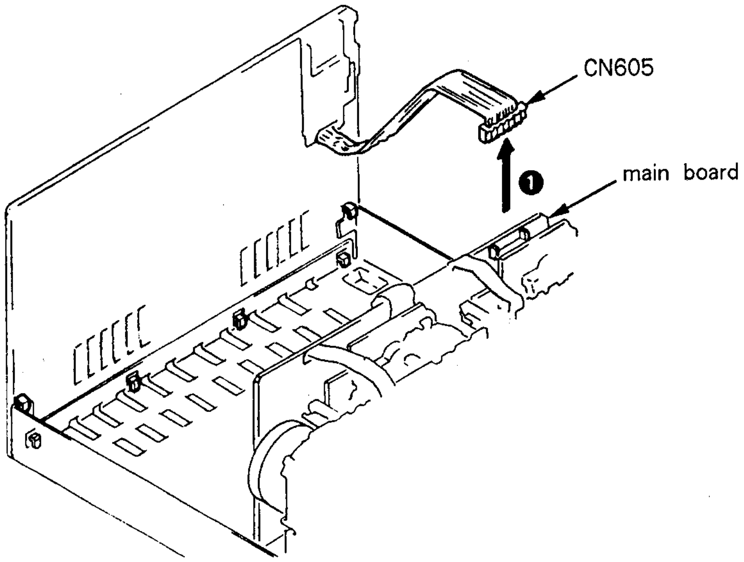
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

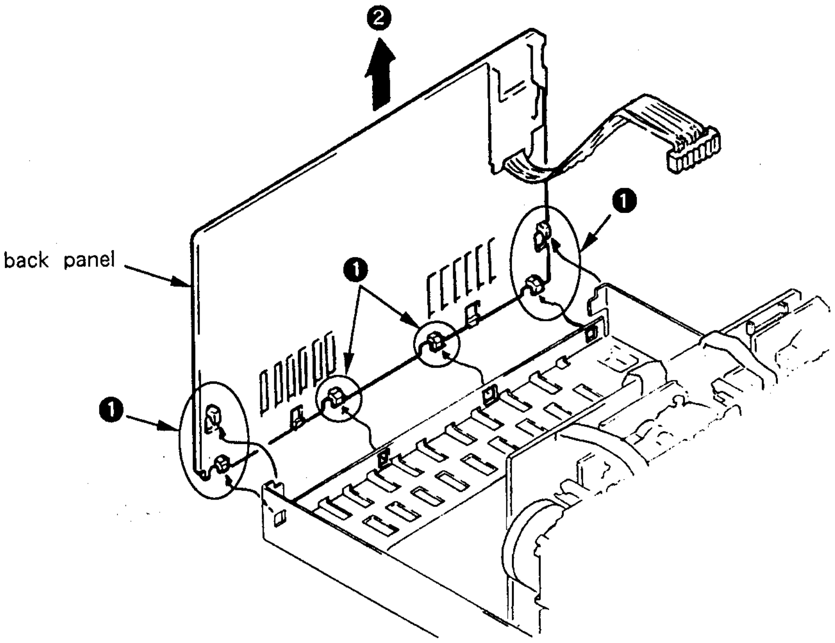
SECTION 2
DISASSEMBLY

2-1. BACK PANEL REMOVAL

Note : Follow the disassembly procedure in the numerical order given.

① Remove the connector of the main board (CN605).
② Release the latches while lifting up back panel.


CN605
main board
❶


❷
back panel
❶
❶
❶
❶

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :

record／playback head	pinch roller
erase head	rubber belts
capstan	idler

2. Demagnetize the record／playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the perts adjusted.
5. The adjustments should be performed in the rated power supply voltage unless otherwise noted.

Torque Measurement

Torgue	Torque meter	Meter reading
FWD	CQ-102C	35 to 60g・cm (0.49 to 0.83 oz・inch)
FWD Back tension	CQ-102C	2 to 6g・cm (0.028 to 0.08 oz・inch)
REV	CQ-102RC	35 to 60g・cm (0.49 to 0.83 oz・inch)
REV Back tension	CQ-102RC	2 to 6g・cm (0.028 to 0.08 oz・inch)
FF, REW	CQ-201B	70 to 110g・cm (0.98 to 1.52 oz・inch)

3-2. ELECTRICAL ADJUSTMENT

Note : The adjustment should be performed in the order given in the service manual. As a rule, adjustment about playback should be performed before adjustment about recording.

The adjustments should be performed for both L-CH and R-CH.

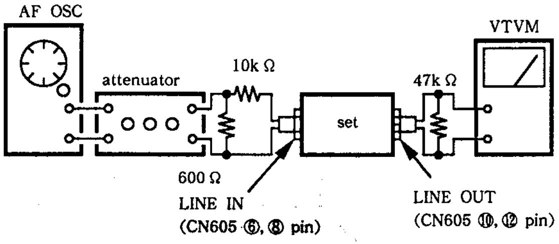
- Switches and controls should be set as follows unless otherwise specified.

  DOLBY NR switch : OFF
  DIRECTION mode switch : ⇄

- Standard Record :

  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

−Record Mode−



Standard Input Level

input terminal	LINE IN
source impedance	10kΩ
input level	0.25V (−10dB)

Standard Output Level

output terminal	LINE OUT
load impedance	47kΩ
output level	0.35V (−7dB)

Test tape

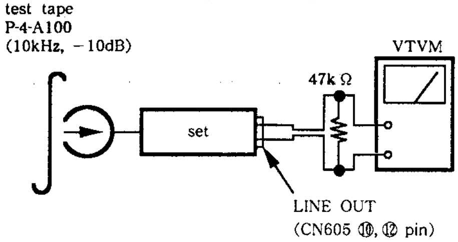
Type	Signal	Used for
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record／Playback Head Azimuth Adjustment

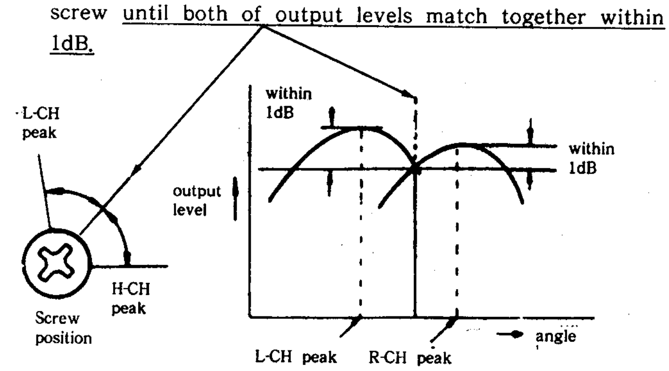
DECK A **DECK B**

Procedure :

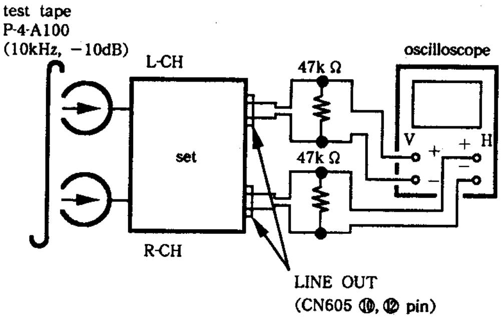
1. Mode : FWD playback

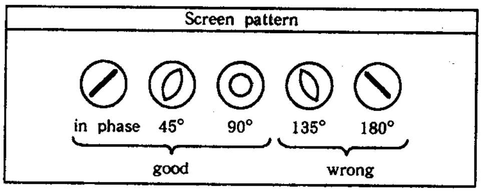


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.


L-CH peak
H-CH peak
Screw position
within 1dB
output level
within 1dB
L-CH peak
R-CH peak
angle

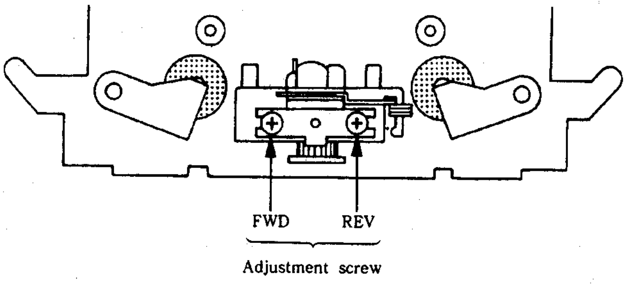
3. Phase Check
   Mode : playback


test tape
P-4-A100
(10kHz, −10dB)
L-CH
R-CH
set
47k Ω
47k Ω
oscilloscope
V
H
+
−
+
−
LINE OUT
(CN605 ⑩, ⑫ pin)


Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Set in the REV mode and repeat the step 1-3.
5. After the adjustment, lock the screws with locking compound.

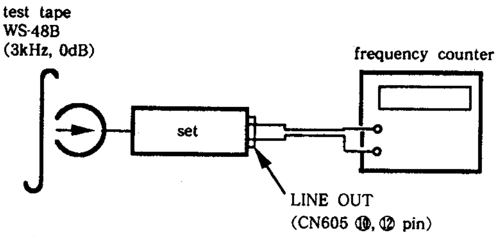
Adjustment Location : Record／Playback head


FWD
REV
Adjustment screw

Tape Speed Adjustment DECK A DECK B

Procedure :

Mode : playback


test tape
WS-48B
(3kHz, 0dB)
set
frequency counter
LINE OUT
(CN605 ⑩, ⑫ pin)

Perform high speed adjustment before mormal speed adjustment

(high speed adjustment)

1. Set to FWD playback mode.
2. Keep on pressing the HIGH SPEED DUBBING switch.
3. Adjust the RV72A (DECK A), RV72B (DECK B) so that the frequency counter reading becomes 6,000±30Hz.
4. Set in the REV mode and repeat the step 1-3.

(normal speed adjustment)

1. Set to FWD playback mode.
2. Keep on pressing the NORMAL SPEED DUBBING switch.
3. Adjust the RV71A (DECK A), RV71B (DECK B) so that the frequency counter reading becomes 3,000±15Hz.
4. Set in the REV mode and repeat the step 1-3.

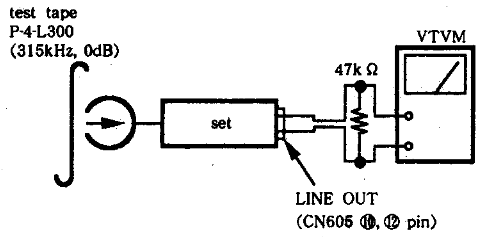
Frequency difference between the beginning and the end of the tape, should be within 3%.
Frequency difference between deck A and deck B the beginning of the tape should be within 1%.

Adjustment Location : MD (A), MD (B) board

Playback Level Adjustment DECK A DECK B

Procedure :

Mode : playback


test tape
P-4-L300
(315kHz, 0dB)
VTVM
47k Ω
set
LINE OUT
(CN605 ⑩, ⑫ pin)

Adjust RV11 (L-CH), RV21 (R-CH) so that the reading on VTVM meets the adjustmeny limits below.

Ajustment Limits :

LINE OUT level : −7±1dB (0.39−0.31dB)

Level difference between channels : less than 1dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : MD (A), MD (B) board

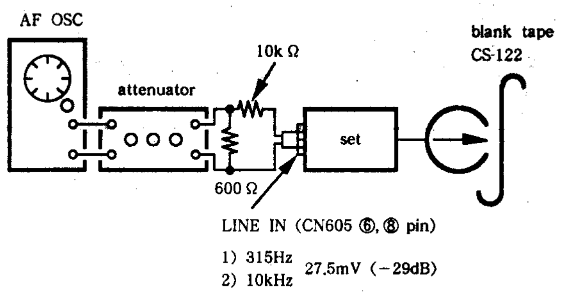
Record Bias Adjustment DECK A DECK B

Setting :

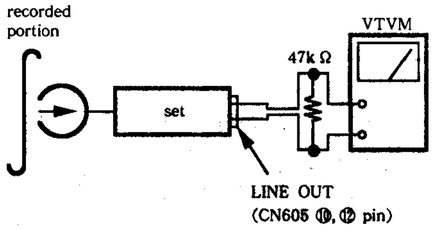
REC LEVEL control : Standard Record (See page 5).

Procedure :

1. Mode : record


AF OSC
attenuator
10k Ω
600 Ω
set
blank tape
CS-122
LINE IN (CN605 ⑥, ⑧ pin)
1) 315Hz
2) 10kHz
27.5mV (−29dB)

2. Mode : playback


recorded
portion
VTVM
47k Ω
set
LINE OUT
(CN605 ⑩, ⑫ pin)

Playback the signal recorded in step 1.
Confirm that the 10kHz playback output is 0±0.5dB relative to the 315Hz output. If necessary, adjust RV12 (L-CH), RV22 (R-CH) and repeat the steps given above.

Adjustment Location : MD (B) board

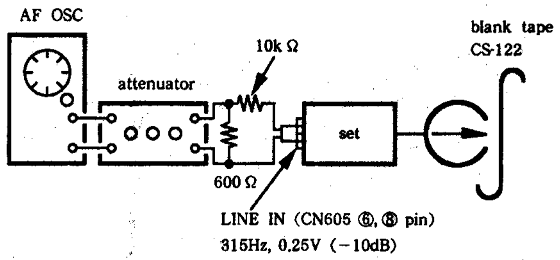
Record Level Adjustment DECK A DECK B

Setting :

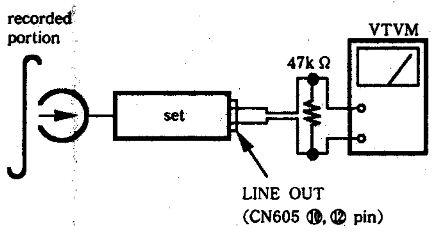
REC LEVEL control : Standard Record (See page 5).

Procedure :

1. Mode : record


AF OSC
attenuator
10k Ω
600 Ω
set
blank tape
CS-122
LINE IN (CN605 ⑥, ⑧ pin)
315Hz, 0.25V (−10dB)

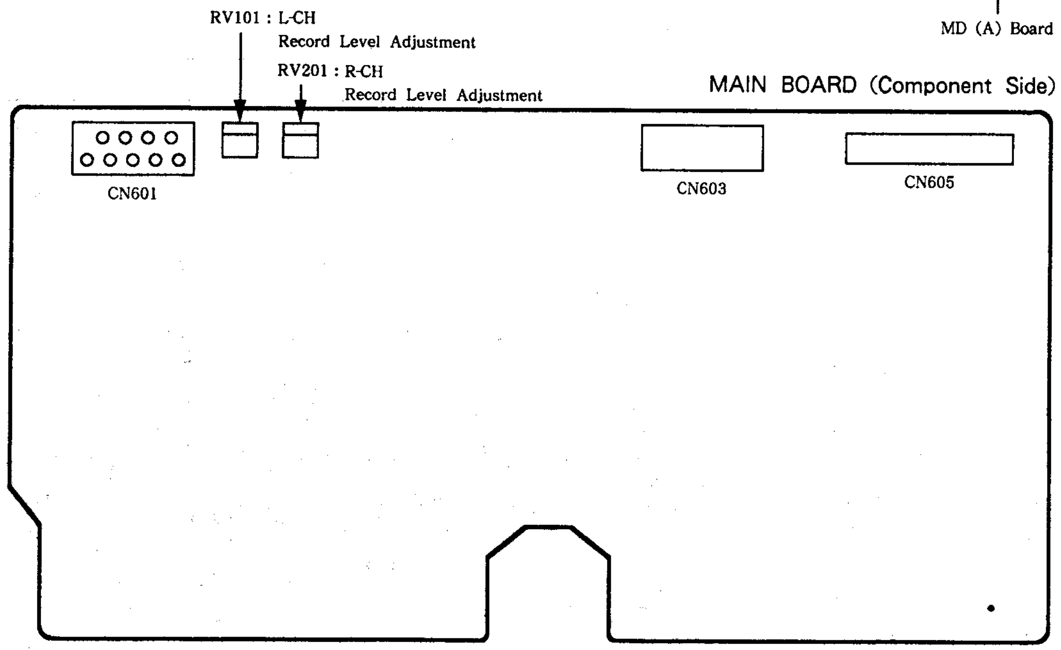
2. Mode : playback


recorded
portion
VTVM
47k Ω
set
LINE OUT
(CN605 ⑩, ⑫ pin)

3. Playback the signal recorded in step 1.
   Confirm that the signal level is within the adjustment limits below. If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the step 1-3.

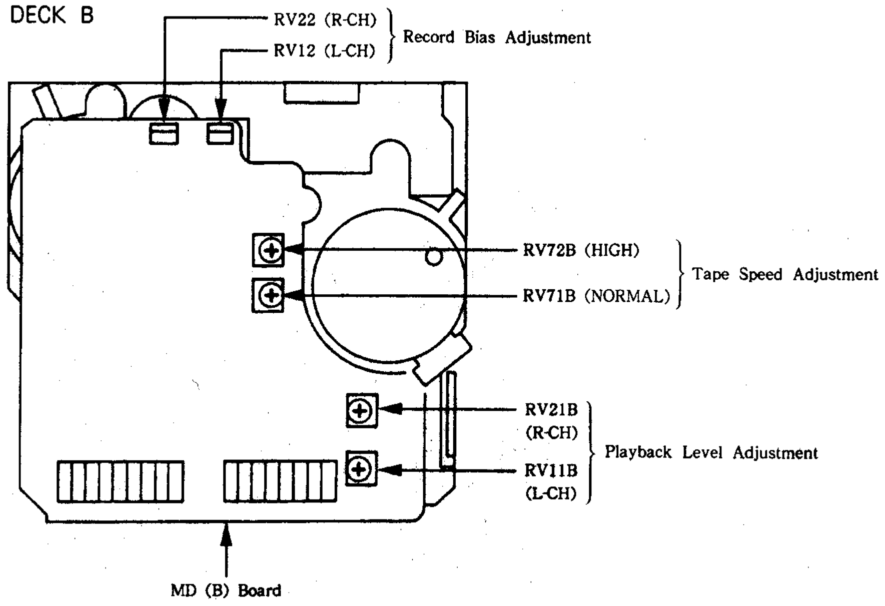
Ajustment Limits : −7dB±0.5dB (0.33−0.36V)

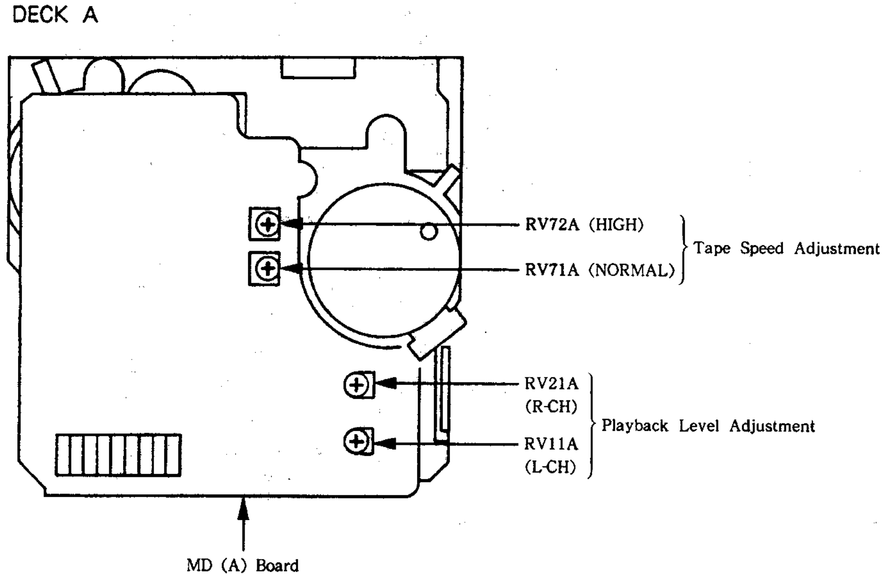
Adjustment Location : MAIN board


RV101 : L-CH
Record Level Adjustment
RV201 : R-CH
Record Level Adjustment
CN601
CN603
CN605

MAIN BOARD (Component Side)

Adjustment Location : MD (B) board


DECK B
RV22 (R-CH)
RV12 (L-CH)
Record Bias Adjustment
RV72B (HIGH)
RV71B (NORMAL)
Tape Speed Adjustment
RV21B
(R-CH)
RV11B
(L-CH)
Playback Level Adjustment
MD (B) Board


DECK A
RV72A (HIGH)
RV71A (NORMAL)
Tape Speed Adjustment
RV21A
(R-CH)
RV11A
(L-CH)
Playback Level Adjustment
MD (A) Board

4-1. CIRCUI

.)} Tape Speed Adjustment

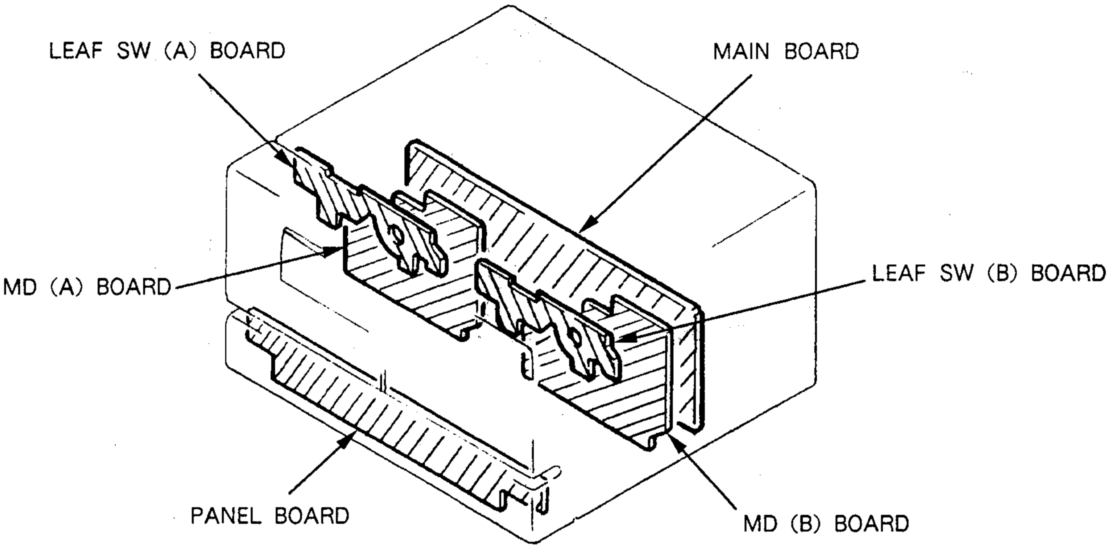
k Level Adjustment

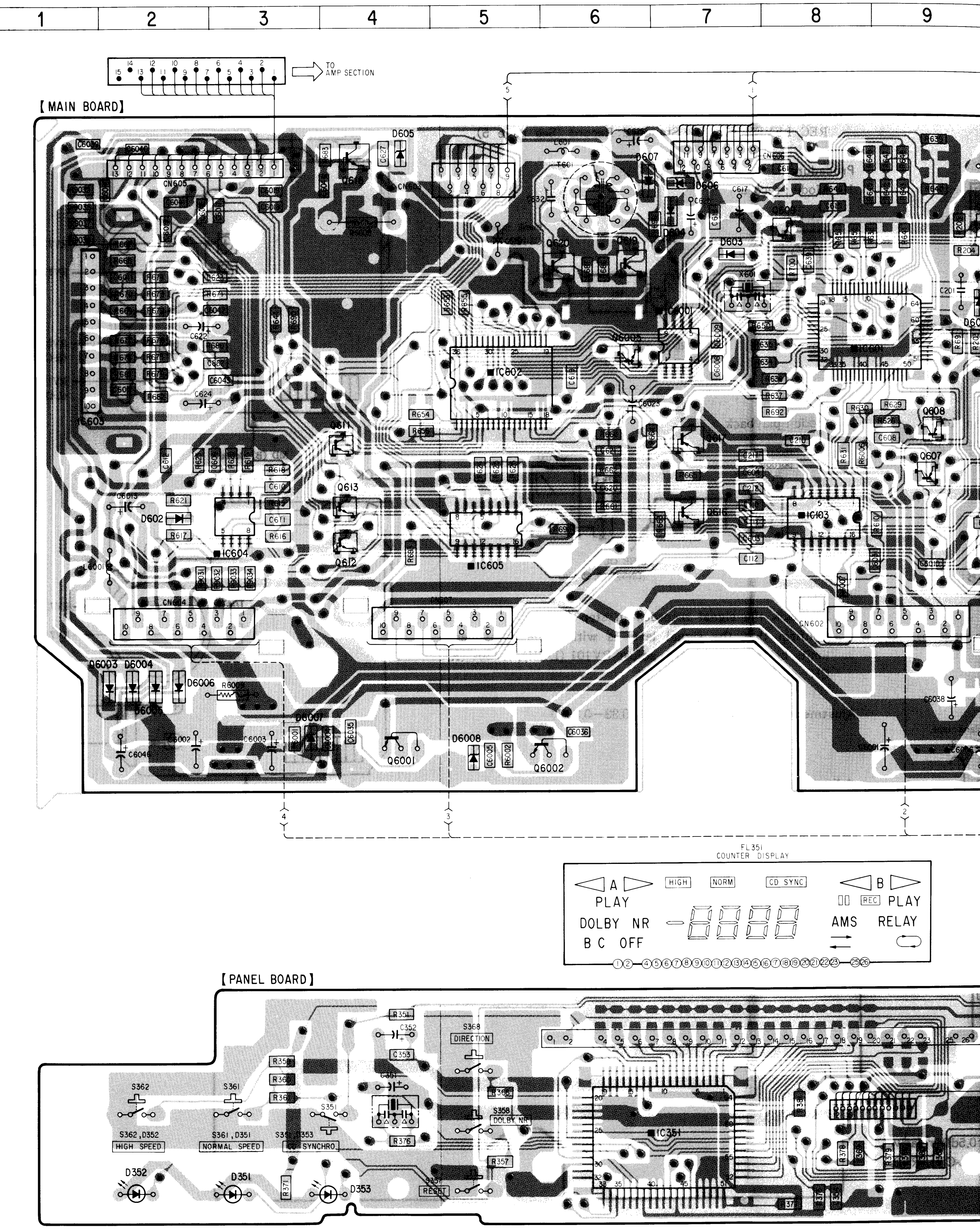
)} Tape Speed Adjustment

Level Adjustment

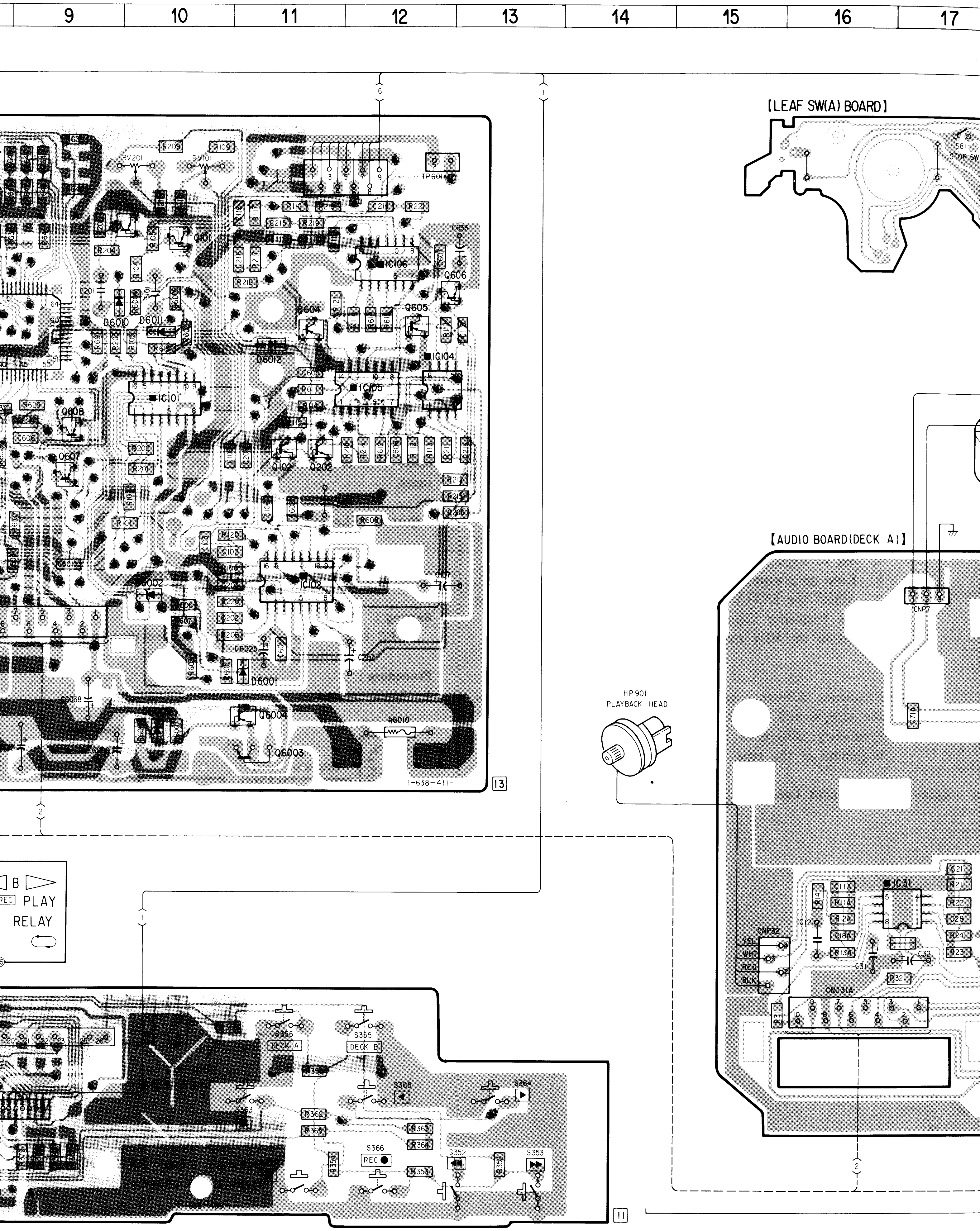
SECTION 4
DIAGRAMS

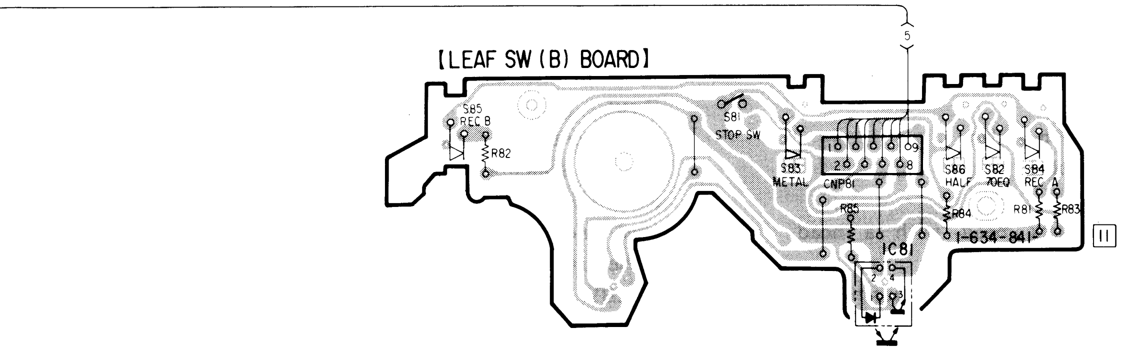
4-1. CIRCUIT BOARDS LOCATION

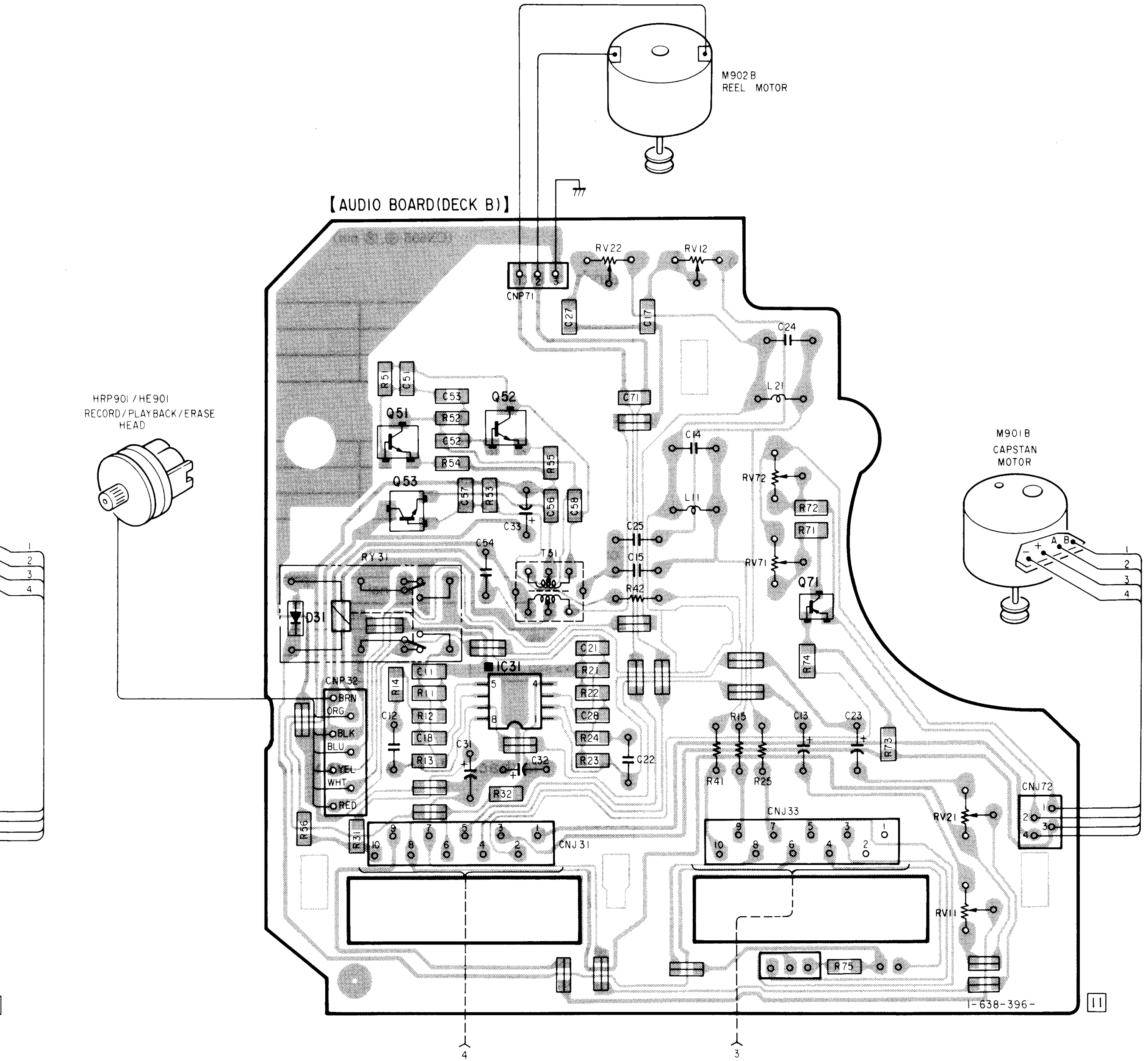

LEAF SW (A) BOARD
MAIN BOARD
MD (A) BOARD
LEAF SW (B) BOARD
PANEL BOARD
MD (B) BOARD


1
2
3
4
5
6
7
8
9
TO AMP SECTION
【MAIN BOARD】
CN605
CN603
CN604
CN607
CN602
CN606
IC602
IC604
IC605
IC6001
IC601
IC103
Q610
Q611
Q612
Q613
Q617
Q616
Q620
Q619
Q6005
Q608
Q607
Q6001
Q6002
D605
D606
D607
D603
D604
D602
D6003
D6004
D6005
D6006
D6007
D6008
T601
X601
FL351
COUNTER DISPLAY
A
HIGH
NORM
CD SYNC
B
PLAY
REC
PLAY
DOLBY NR
AMS
RELAY
B C OFF
【PANEL BOARD】
S362
S361
S351
S368
DIRECTION
S358
DOLBY NR
S362, D352
HIGH SPEED
S361, D351
NORMAL SPEED
S351, D353
SYNCHRO
S357
RESET
D352
D351
D353
IC351

02

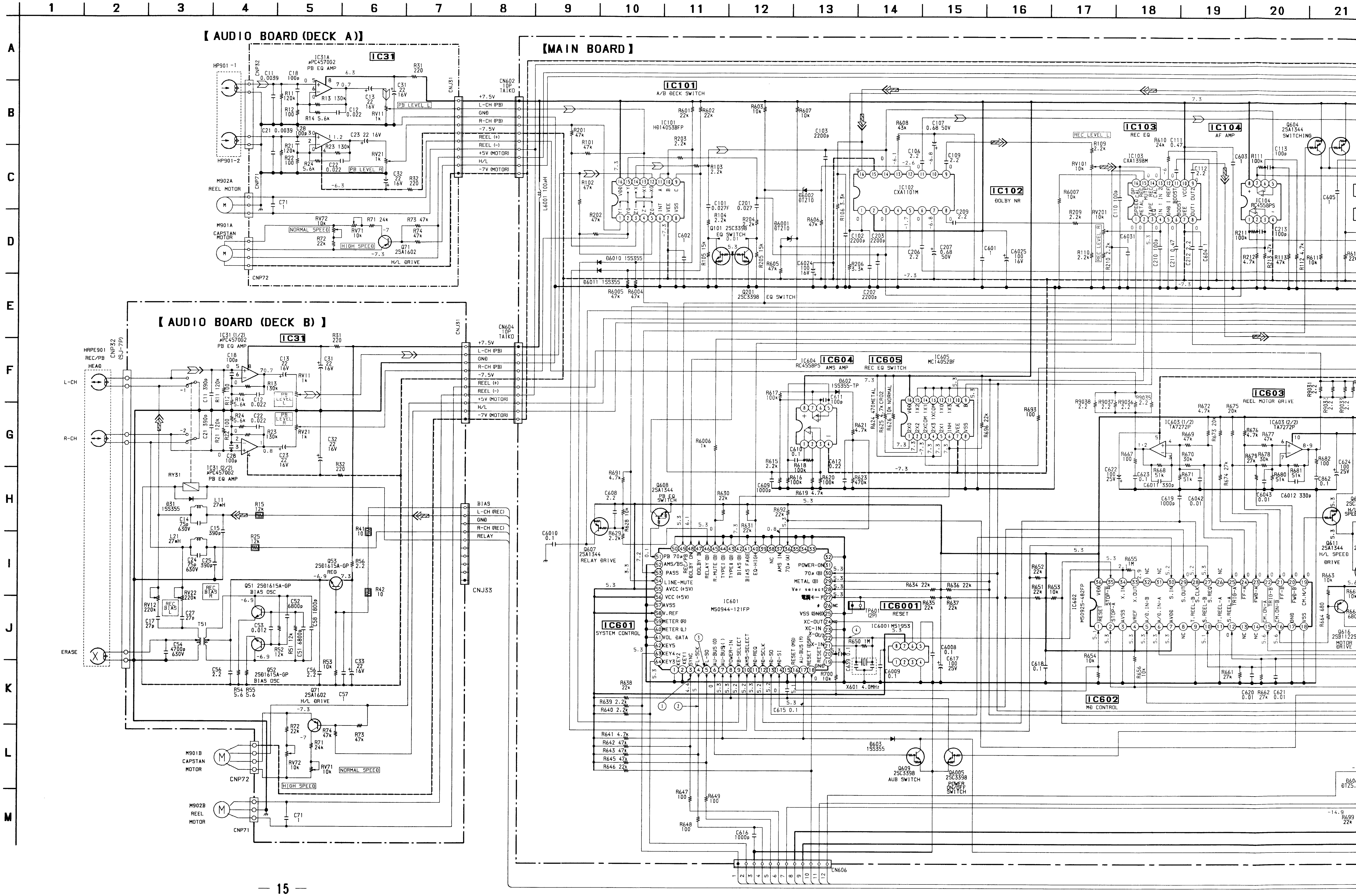

9
10
11
12
13
14
15
16
17
[LEAF SW(A) BOARD]
S81 STOP SW
[AUDIO BOARD(DECK A)]
CNP71
HP901 PLAYBACK HEAD
IC31
CNP32
YEL
WHT
RED
BLK
CNJ31A
CN601
TP601
IC106
IC104
IC105
IC101
IC102
Q101
Q102
Q202
Q604
Q605
Q606
Q607
Q608
Q6003
Q6004
D6001
D6002
D6010
D6011
D6012
RV201
RV101
R6010
1-638-411-
13
B
REC
PLAY
RELAY
S356
DECK A
S355
DECK B
S363
S365
S364
S366
REC ●
S352
S353
11


【LEAF SW (B) BOARD】
S85
REC B
R82
S81
STOP SW
S83
METAL
CNP81
1
9
2
8
S86
HALF
S82
70EQ
S84
REC A
R85
R84
R81
R83
1-634-841-
IC81
11
5

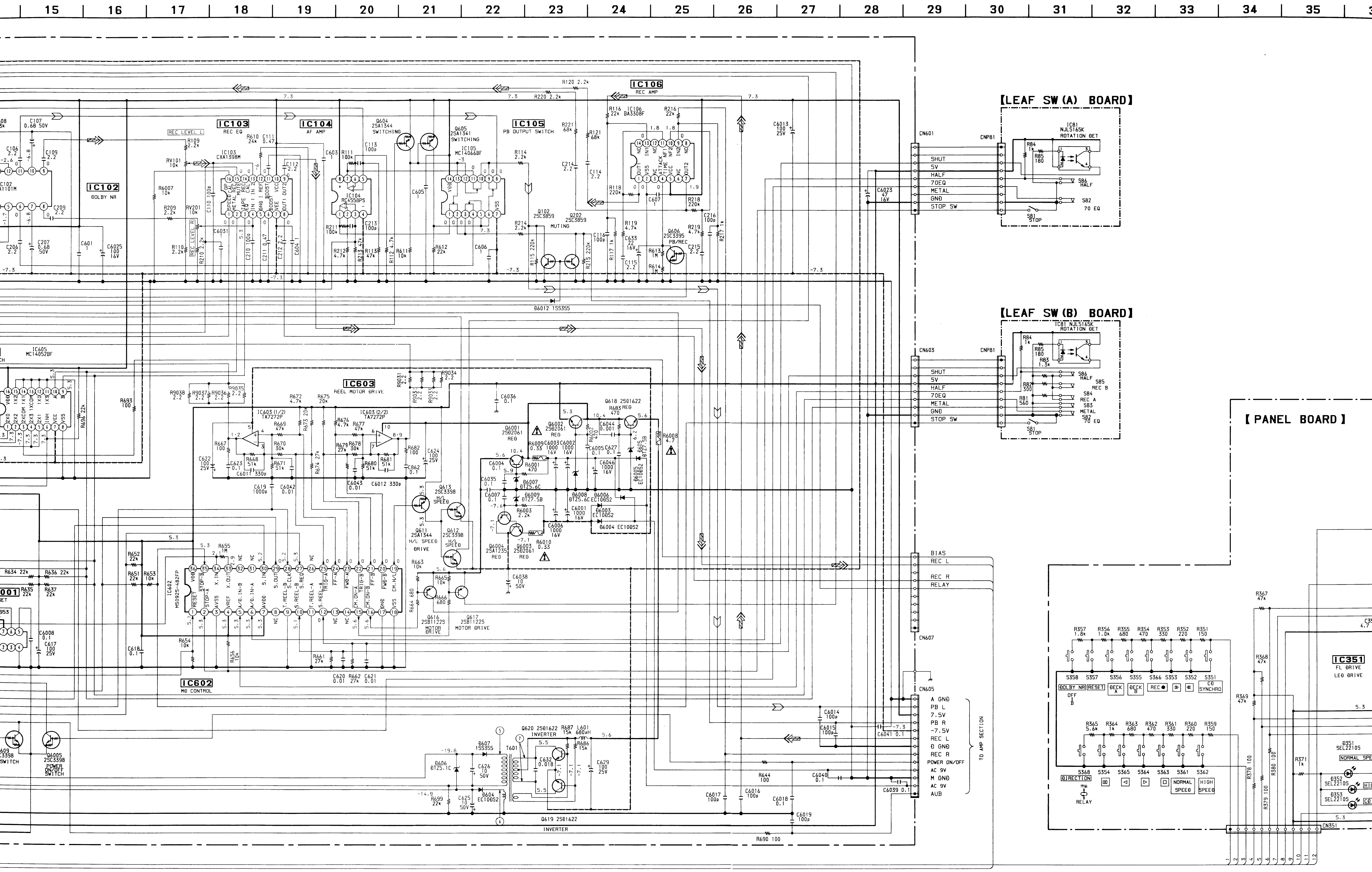

M902B
REEL MOTOR
【AUDIO BOARD (DECK B)】
CNP71
RV22
RV12
C27
C17
C24
L21
R51
C51
C53
Q52
Q51
R52
C52
R54
R55
Q53
C57
R53
C56
C58
C33
C71
C14
L11
RV72
R72
R71
C25
C15
R42
RV71
Q71
C54
T51
RY31
D31
HRP901 / HE901
RECORD / PLAYBACK / ERASE
HEAD
M901B
CAPSTAN
MOTOR
CNP32
BRN
ORG
BLK
BLU
YEL
WHT
RED
R14
C11
R11
IC31
C21
R21
R22
C28
R24
R23
C22
C12
R12
C18
R13
C31
C32
R32
R74
R15
C13
C23
R73
R41
R25
CNJ33
CNJ72
RV21
RV11
R56
R31
CNJ31
R75
1-638-396-
11
4
3

DECK-B

4-4. SCHEMATIC DIAGRAM —US, Canadian, E Model— • Refer to page 30 for Waveforms. • Refer to page 31 for IC Block Diagrams.



【AUDIO BOARD (DECK A)】
IC31
IC31A μPC4570G2 PB EQ AMP
HP901-1
HP901-2
M902A REEL MOTOR
M901A CAPSTAN MOTOR
NORMAL SPEED
HIGH SPEED
Q71 2SA1602 H/L DRIVE
PB LEVEL L
PB LEVEL R
CNP32
CNP71
CNP72
CNJ31
CN602 10P TAIKO
+7.5V
L-CH (PB)
GND
R-CH (PB)
-7.5V
REEL (+)
REEL (-)
+5V (MOTOR)
H/L
-7V (MOTOR)
【AUDIO BOARD (DECK B)】
IC31 (1/2) μPC4570G2 PB EQ AMP
IC31 (2/2) μPC4570G2 PB EQ AMP
HRPE901 REC/PB HEAD
L-CH
R-CH
ERASE
CNP32 (SJ-7P)
RY31
D31 1SS355
L11 27mH
L21 27mH
REC BIAS L
REC BIAS R
T51
Q51 2SD1615A-GP BIAS OSC
Q52 2SD1615A-GP BIAS OSC
Q53 2SD1615A-GP REG
Q71 2SA1602 H/L DRIVE
M901B CAPSTAN MOTOR
M902B REEL MOTOR
CNP71
CNP72
CN604 10P TAIKO
CNJ33
BIAS
L-CH (REC)
GND
R-CH (REC)
RELAY
【MAIN BOARD】
IC101 A/B DECK SWITCH
IC101 HD14053BFP
IC102 DOLBY NR
IC102 CXA1101M
IC103 REC EQ
IC103 CXA1398M
IC104 AF AMP
IC104 RC4558PS
Q604 2SA1344 SWITCHING
REC LEVEL L
REC LEVEL R
Q101 2SC3398 EQ SWITCH
Q201 2SC3398 EQ SWITCH
D6001 DTZ10
D6002 DTZ10
D6010 1SS355
D6011 1SS355
L6001 100μH
IC604 RC4558PS
IC604 AMS AMP
IC605 REC EQ SWITCH
IC605 MC14052BF
D602 1SS355-TP
70μ METAL
70μ CrO2
70μ NORMAL
Q608 2SA1344 PB EQ SWITCH
Q607 2SA1344 RELAY DRIVE
IC601 SYSTEM CONTROL
IC601 M50944-121FP
IC6001 RESET
IC6001 M51953
TP601 (2P)
X601 4.0MHz
IC603 REEL MOTOR DRIVE
IC603 (1/2) TA7272P
IC603 (2/2) TA7272P
Q611 2SA1344 H/L SPEED DRIVE
Q616 2SB1122S MOTOR DRIVE
IC602 MD CONTROL
IC602 M50925-482FP
D603 1SS355
Q609 2SC3398 AUB SWITCH
Q6005 2SC3398 POWER ON/OFF SWITCH
CN606



15
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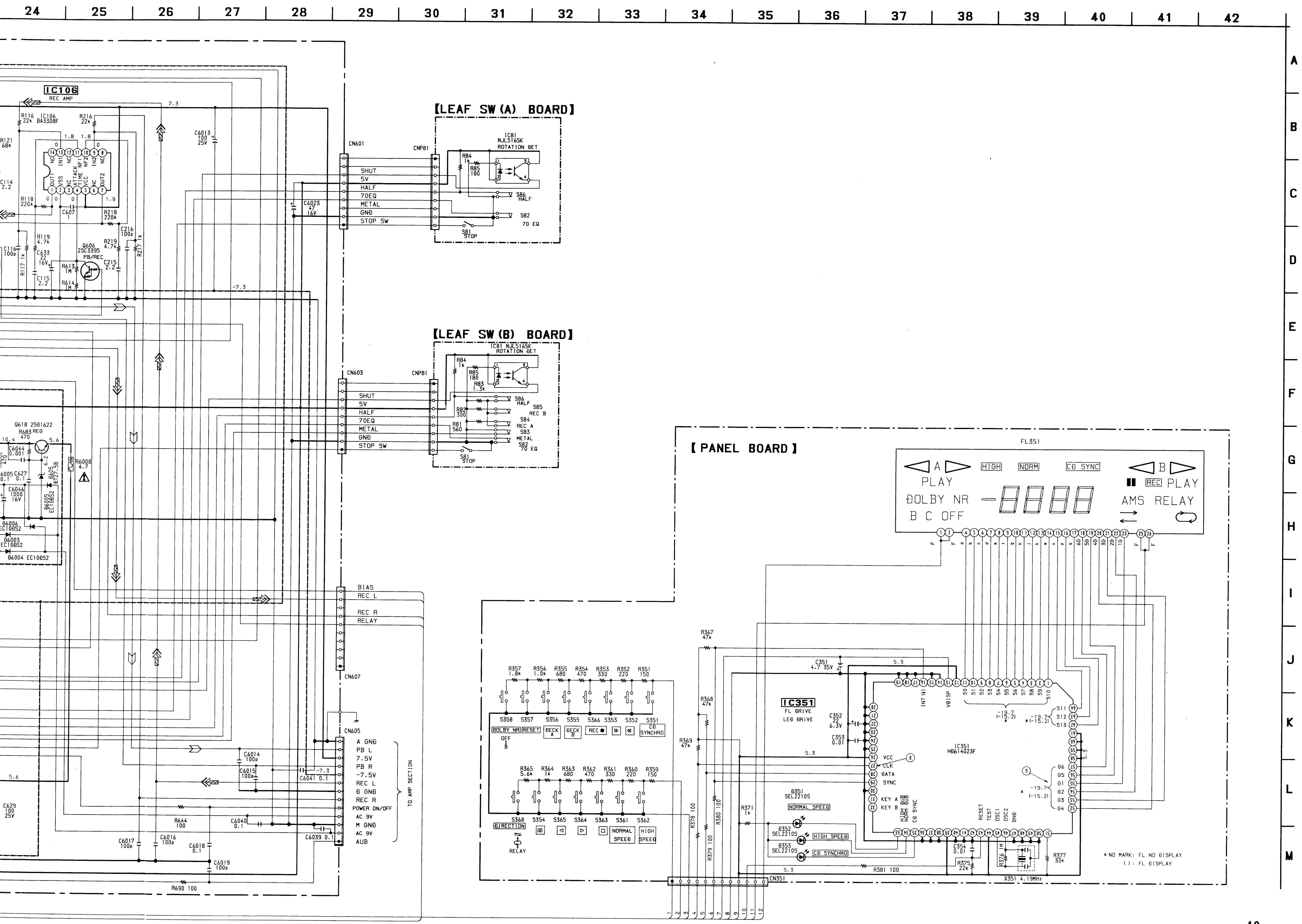
IC102
DOLBY NR
IC103
REC EQ
IC103 CXA1398M
IC104
AF AMP
IC104 RC4558PS
Q604 2SA1344 SWITCHING
Q605 2SA1341 SWITCHING
IC105
PB OUTPUT SWITCH
IC105 MC14066BF
IC106
REC AMP
IC106 BA3308F
Q102 2SC3859
Q202 2SC3859
MUTING
Q606 2SC3395 PB/REC
D6012 1SS355
REC LEVEL L
REC LEVEL R
IC605 MC14052BF
IC603
REEL MOTOR DRIVE
IC603 (1/2) TA7272P
IC603 (2/2) TA7272P
Q618 2SD1622 REG
Q6001 2SD2061 REG
Q6002 2SD2061 REG
Q6003 2SD2061 REG
Q6004 2SA1235 REG
Q611 2SA1344 H/L SPEED DRIVE
Q612 2SC3398 H/L SPEED
Q613 2SC3398 H/L SPEED
Q616 2SB1122S MOTOR DRIVE
Q617 2SB1122S MOTOR DRIVE
D6007 DTZ5.6C
D6009 DTZ7.5B
D6008 DTZ5.6C
D6006 EC10QS2
D6003 EC10QS2
D6004 EC10QS2
D6005 EC10QS2
D605 DTZ7.5B
IC602
MD CONTROL
IC602 M50925-482FP
Q609 2SC3398 SWITCH
Q6005 2SC3398 POWER ON/OFF SWITCH
Q620 2SD1622 INVERTER
Q619 2SD1622
INVERTER
T601
D607 1SS355
D606 DTZ5.1C
D604 EC10QS2
L601 680μH
CN601
CN603
CN605
CN607
SHUT
5V
HALF
70EQ
METAL
GND
STOP SW
BIAS
REC L
REC R
RELAY
A GND
PB L
7.5V
PB R
-7.5V
REC L
D GND
REC R
POWER ON/OFF
AC 9V
M GND
AC 9V
AUB
TO AMP SECTION
【LEAF SW (A) BOARD】
CNP81
IC81 NJL5165K ROTATION DET
S86 HALF
S82 70 EQ
S81 STOP
【LEAF SW (B) BOARD】
IC81 NJL5165K ROTATION DET
S85 REC B
S84 REC A
S83 METAL
S82 70 EQ
S81 STOP
【PANEL BOARD】
S358 DOLBY NR OFF B
S357 RESET
S356 DECK A
S355 DECK B
S366 REC ●
S353 ▷▷
S352 ◁◁
S351 CD SYNCHRO
S368 DIRECTION
S354 ▯▯
S365 ◁
S364 ▷
S363 ◻
S361 NORMAL SPEED
S362 HIGH SPEED
RELAY
IC351
FL DRIVE
LED DRIVE
D351 SEL2210S
D352 SEL2210S
D353 SEL2210S
NORMAL SPE
HIGH
CD
CN351
R690 100


IC106
REC AMP
IC106 BA3308F
【LEAF SW (A) BOARD】
IC81 NJL5165K ROTATION DET
CN601
CNP81
SHUT
5V
HALF
70EQ
METAL
GND
STOP SW
S86 HALF
S82 70 EQ
S81 STOP
【LEAF SW (B) BOARD】
IC81 NJL5165K ROTATION DET
CN603
S85 REC B
S84 REC A
S83 METAL
S82 70 EQ
Q618 2SD1622 REG
Q606 2SC3395 PB/REC
BIAS
REC L
REC R
RELAY
CN607
CN605
A GND
PB L
7.5V
PB R
-7.5V
REC L
D GND
REC R
POWER ON/OFF
AC 9V
M GND
AC 9V
AUB
TO AMP SECTION
R690 100
【PANEL BOARD】
FL351
A
HIGH
NORM
CD SYNC
B
PLAY
REC
DOLBY NR
AMS RELAY
B C OFF
S358
S357
S356
S355
S366
S353
S352
S351
DOLBY NR
RESET
DECK A
DECK B
REC ●
OFF B
S368
S354
S365
S364
S363
S361
S362
DIRECTION
NORMAL SPEED
HIGH SPEED
RELAY
IC351
FL DRIVE
LED DRIVE
IC351 HD614023F
VCC
CLK
DATA
SYNC
KEY A
KEY B
D351 SEL2210S
NORMAL SPEED
D352 SEL2210S
HIGH SPEED
D353 SEL2210S
CD SYNCHRO
RESET
TEST
OSC1
OSC2
GND
X351 4.19MHz
CN351
* NO MARK: FL NO DISPLAY
( ): FL DISPLAY

Note on Schematic Diagram :

- All capacitors are in μ F unless otherwise noted. pF : μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ▭ : fusible resistor.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ━━ : B+ Line
- ━ ━ ━ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.

  ⊳ : PB (DECK A)
  ⊳» : PB (DECK B)
  ⊳» : REC (DECK B)

Note on Printed Wiring Boards :

- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.
- ▭ : Chip components extracted from the rear side.

• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D31	H-23	Q51	G-23
D351	K-3	Q52	G-24
D352	K-2	Q53	G-23
D353	K-4	Q101	B-10
D601	F-10	Q102	D-11
D602	E-2	Q201	B-10
D603	C-7	Q202	D-11
D604	B-7	Q601	F-10
D605	B-4	Q602	F-10
D606	B-7	Q603	F-11
D607	B-6	Q604	C-11
D6003	F-2	Q605	C-12
D6004	F-2	Q606	C-12
D6005	F-2	Q607	E-9
D6006	F-2	Q608	D-9
D6007	G-3	Q609	B-8
D6008	G-5	Q611	D-4
D6009	G-10	Q612	E-4
D6010	C-9	Q613	E-4
D6011	C-10	Q616	E-7
D6012	C-11		
		Q617	D-7
		Q618	B-4
IC101	D-10	Q619	C-6
IC102	E-11	Q620	C-6
IC103	E-8	Q6001	G-4
IC104	D-12		
IC105	D-12	Q6002	G-6
		Q6003	G-11
IC106	C-12	Q6004	G-11
IC351	J-7	Q6005	C-6
IC601	C-8		
IC602	D-5		
IC603	C-1		
IC604	E-3		
IC605	E-5		
IC6001	C-7		

LEAF SW (A) BOARD

Ref. No.	Location
IC81	B-18

LEAF SW (B) BOARD

Ref. No.	Location
IC81	B-26

MD (A) BOARD

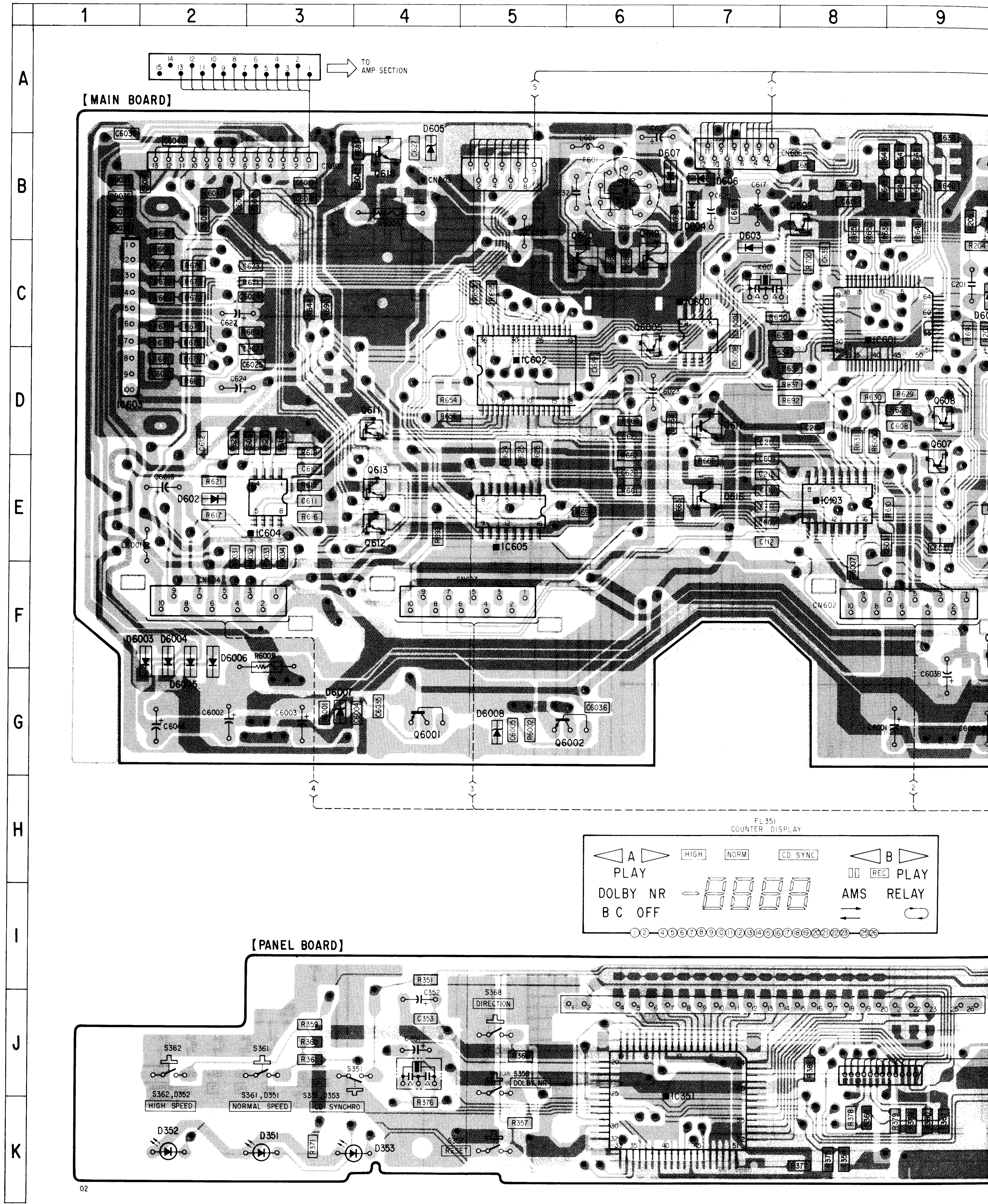
Ref. No.	Location
IC31 Q71	H-17 H-19

MD (B) BOARD

Ref. No.	Location
IC31 Q71	H-24 H-26

4-5. PRINTED WIRING BOARDS —AEP, UK, Germany, Australian Model—

• Refer to page 10 for Semiconductor Lead Layouts.


1
2
3
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5
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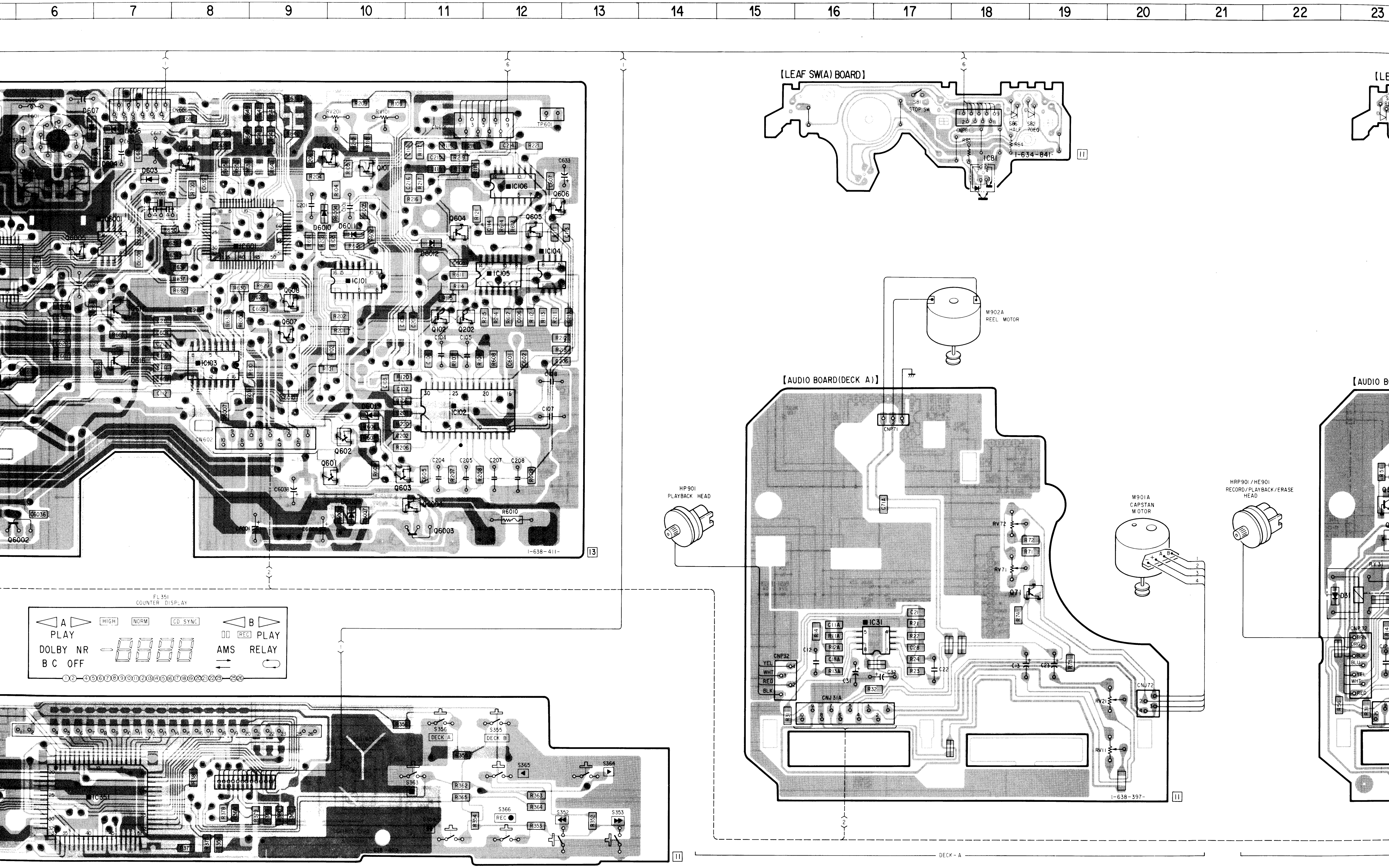
7
8
9
A
B
C
D
E
F
G
H
I
J
K
TO AMP SECTION
[MAIN BOARD]
D605
D607
D606
D603
IC6001
IC602
IC601
IC604
IC605
IC103
Q611
Q613
Q612
Q608
Q607
D602
CN604
CN602
D6003
D6004
D6006
D6007
D6008
Q6001
Q6002
FL351
COUNTER DISPLAY
A
PLAY
DOLBY NR
B C OFF
HIGH
NORM
CD SYNC
B
REC
PLAY
AMS
RELAY
[PANEL BOARD]
S362
S362,D352
HIGH SPEED
S361
S361,D351
NORMAL SPEED
S351
S353
SYNCHRO
S368
DIRECTION
S358
DOLBY NR
RESET
D352
D351
D353
IC351
02

• Refer to page 10 for Semiconductor Lead Layouts.


6
7
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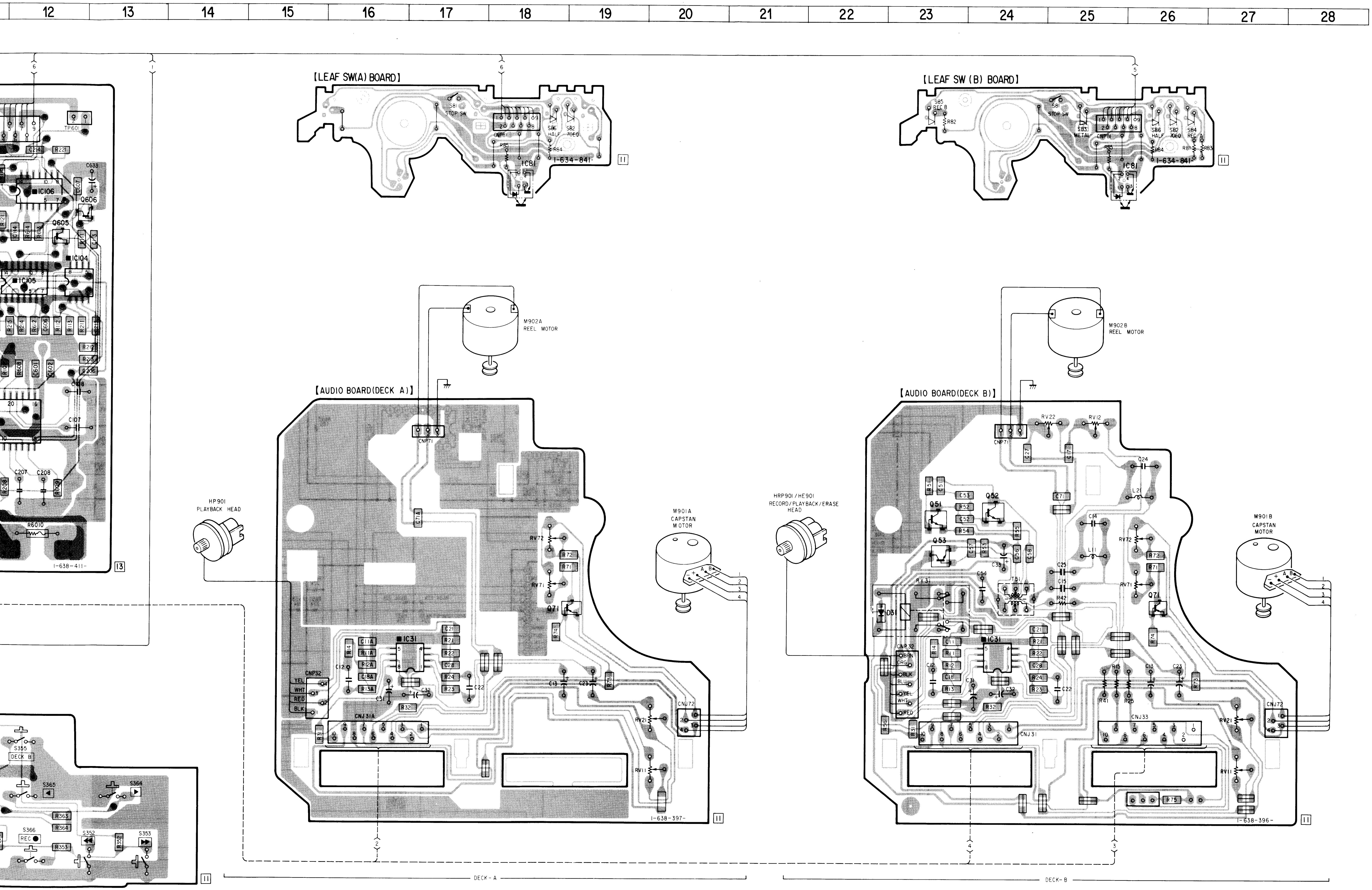
11
12
13
14
15
16
17
18
19
20
21
22
23
1-638-411-
13
FL351
COUNTER DISPLAY
A
PLAY
HIGH
NORM
CD SYNC
B
PLAY
REC
DOLBY NR
AMS
RELAY
B C OFF
IC351
S356
DECK A
S355
DECK B
S363
S365
S364
S366
REC
S352
S353
R362
R365
R363
R364
R353
R354
R352
11
【LEAF SW(A) BOARD】
S81
STOP SW
CNP81
S86
HALF
S82
70EQ
R85
R84
IC81
1-634-841-
11
M902A
REEL MOTOR
【AUDIO BOARD(DECK A)】
CNP71
HP901
PLAYBACK HEAD
M901A
CAPSTAN
MOTOR
HRP901/HE901
RECORD/PLAYBACK/ERASE
HEAD
CNP32
YEL
WHT
RED
BLK
IC31
CNJ31A
CNJ72
RV72
RV71
RV21
RV11
Q71
R72
R71
R74
C71A
C12
C31
C32
C22
C13
C23
R14
C11A
R11A
R12A
C18A
R13A
R32
R31
R21
R22
R23
R24
C21
C28
1-638-397-
11
DECK-A
【LE
【AUDIO BO
D31
CNP32
BRN
ORG
BLK
BLU
YEL
WHT
RED
IC101
IC102
IC103
IC104
IC105
IC106
IC601
CN601
CN602
Q101
Q102
Q202
Q601
Q602
Q603
Q604
Q605
Q606
Q607
Q608
Q6001
Q6002
Q6003
D603
D606
D607
D6010
D6011
D6012
RV101
RV201
TP601
R6010


12
13
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16
17
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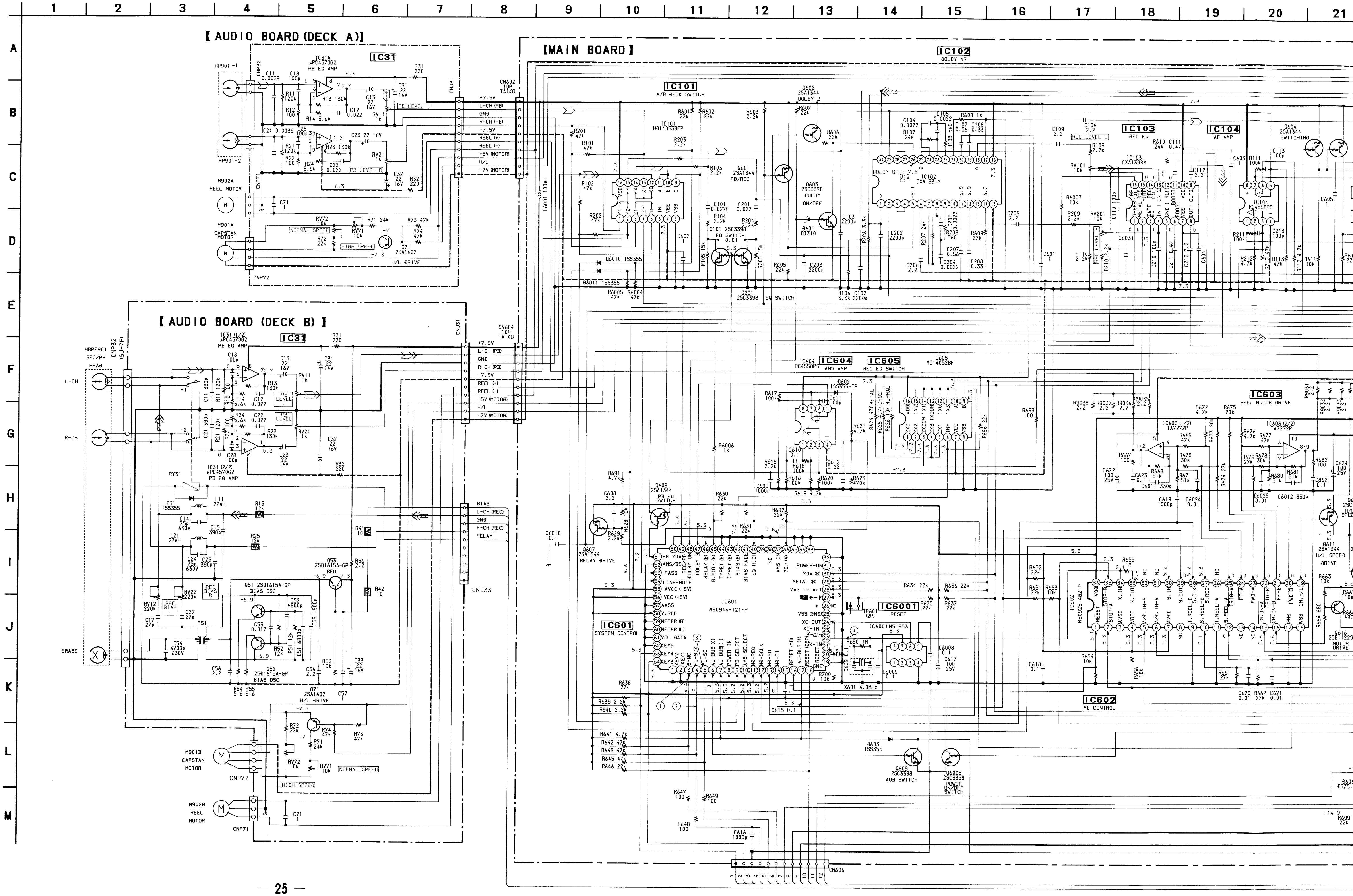
21
22
23
24
25
26
27
28
[LEAF SW(A) BOARD]
S81 STOP SW
CNP81
S86 HALF
S82 70EQ
R85
R84
IC81
1-634-841-
11
[LEAF SW (B) BOARD]
S85 REC B
R82
S83 METAL
S84 REC A
R81
R83
M902A REEL MOTOR
M902B REEL MOTOR
[AUDIO BOARD(DECK A)]
[AUDIO BOARD(DECK B)]
CNP71
HP901 PLAYBACK HEAD
HRP901 / HE901 RECORD/PLAYBACK/ERASE HEAD
M901A CAPSTAN MOTOR
M901B CAPSTAN MOTOR
IC31
CNP32
YEL
WHT
RED
BLK
BRN
ORG
BLU
CNJ31A
CNJ31
CNJ33
CNJ72
RV72
RV71
RV21
RV11
RV22
RV12
RV31
Q71
Q51
Q52
Q53
T51
D31
L11
L21
1-638-397-
1-638-396-
IC106
IC104
IC105
Q605
Q606
TP601
R6010
1-638-411-
13
S355 DECK B
S365
S364
S366 REC
S352
S353
R363
R364
R353
DECK-A
DECK-B

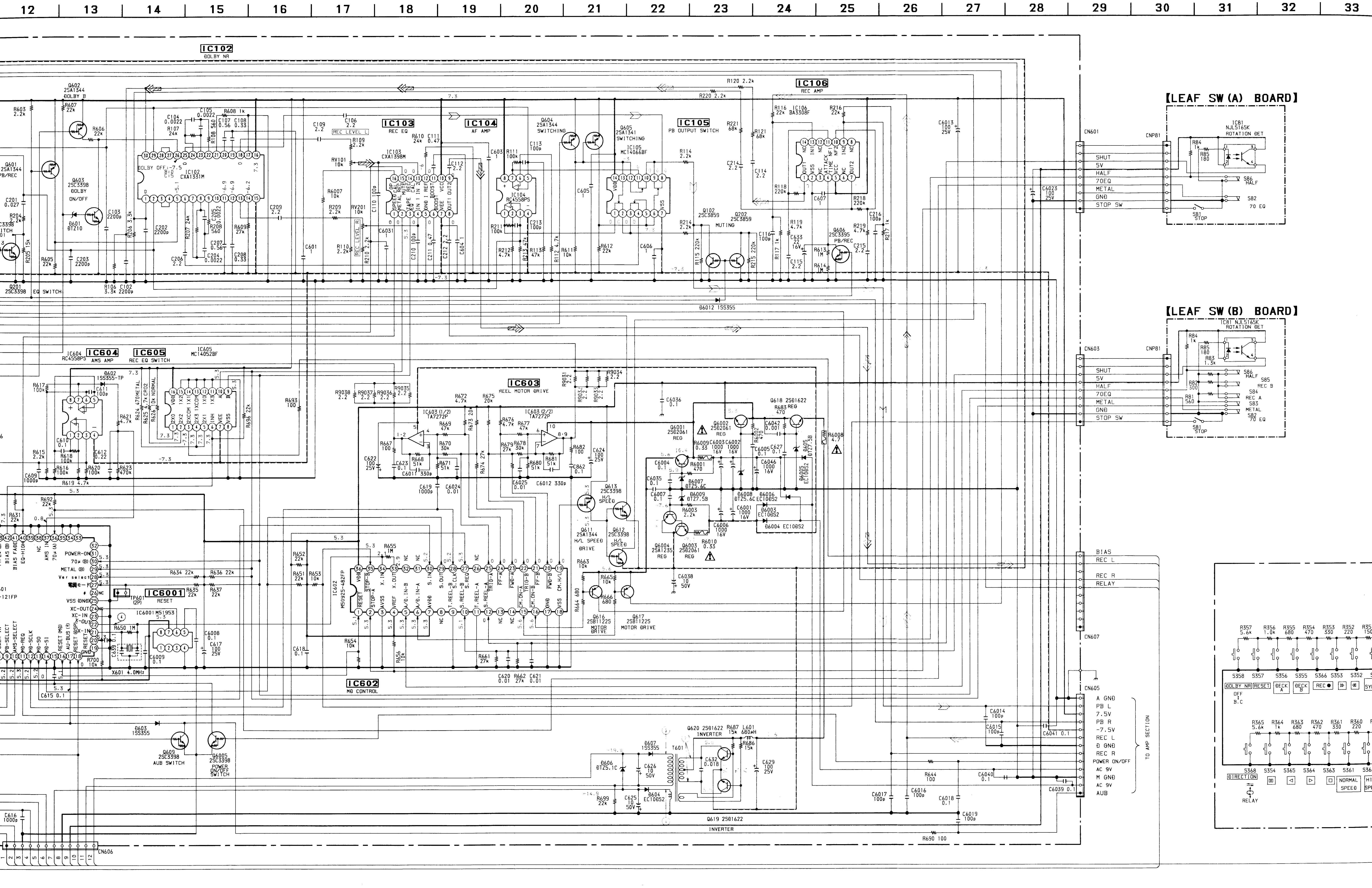
4-6. SCHEMATIC DIAGRAM —AEP, UK, Germany, Australian Model—

• Refer to page 30 for Waveforms. • Refer to page 31 for IC Block Diagrams.



【AUDIO BOARD (DECK A)】
IC31
IC31A μPC4570G2 PB EQ AMP
HP901-1
HP901-2
M902A REEL MOTOR
M901A CAPSTAN MOTOR
CNP32
CNP71
CNP72
CNJ31
NORMAL SPEED
HIGH SPEED
Q71 2SA1602 H/L DRIVE
PB LEVEL L
PB LEVEL R
CN602 10P TAIKO
+7.5V
L-CH (PB)
GND
R-CH (PB)
-7.5V
REEL (+)
REEL (-)
+5V (MOTOR)
H/L
-7V (MOTOR)
【AUDIO BOARD (DECK B)】
IC31 (1/2) μPC4570G2 PB EQ AMP
IC31 (2/2) μPC4570G2 PB EQ AMP
HRPE901 REC/PB HEAD
L-CH
R-CH
ERASE
CN604 10P TAIKO
RY31
D31 1SS355
Q53 2SD1615A-GP REG
Q51 2SD1615A-GP BIAS OSC
Q52 2SD1615A-GP BIAS OSC
Q71 2SA1602 H/L DRIVE
REC BIAS L
REC BIAS R
BIAS
L-CH (REC)
R-CH (REC)
RELAY
CNJ33
M901B CAPSTAN MOTOR
M902B REEL MOTOR
【MAIN BOARD】
IC101 A/B DECK SWITCH
IC101 HD14053BFP
IC102 DOLBY NR
IC102 CXA1331M
Q602 2SA1344 DOLBY B
Q601 2SA1344 PB/REC
Q603 2SC3398 DOLBY ON/OFF
D601 DTZ10
Q101 2SC3398 EQ SWITCH
Q201 2SC3398 EQ SWITCH
D6010 1SS355
D6011 1SS355
IC103 REC EQ
IC103 CXA1398M
IC104 AF AMP
IC104 RC4558PS
Q604 2SA1344 SWITCHING
IC604 AMS AMP
IC604 RC4558PS
IC605 REC EQ SWITCH
IC605 MC14052BF
D602 1SS355-TP
IC603 REEL MOTOR DRIVE
IC603 (1/2) TA7272P
IC603 (2/2) TA7272P
Q608 2SA1344 PB EQ SWITCH
Q607 2SA1344 RELAY DRIVE
IC601 SYSTEM CONTROL
IC601 M50944-121FP
IC6001 RESET
IC6001 M51953
X601 4.0MHz
TP601 (2P)
IC602 MD CONTROL
IC602 M50925-482FP
Q611 2SA1344 H/L SPEED DRIVE
Q616 2SB1122S MOTOR DRIVE
D603 1SS355
Q609 2SC3398 AUB SWITCH
Q6005 2SC3398 POWER ON/OFF SWITCH
CN606

or IC Block Diagrams.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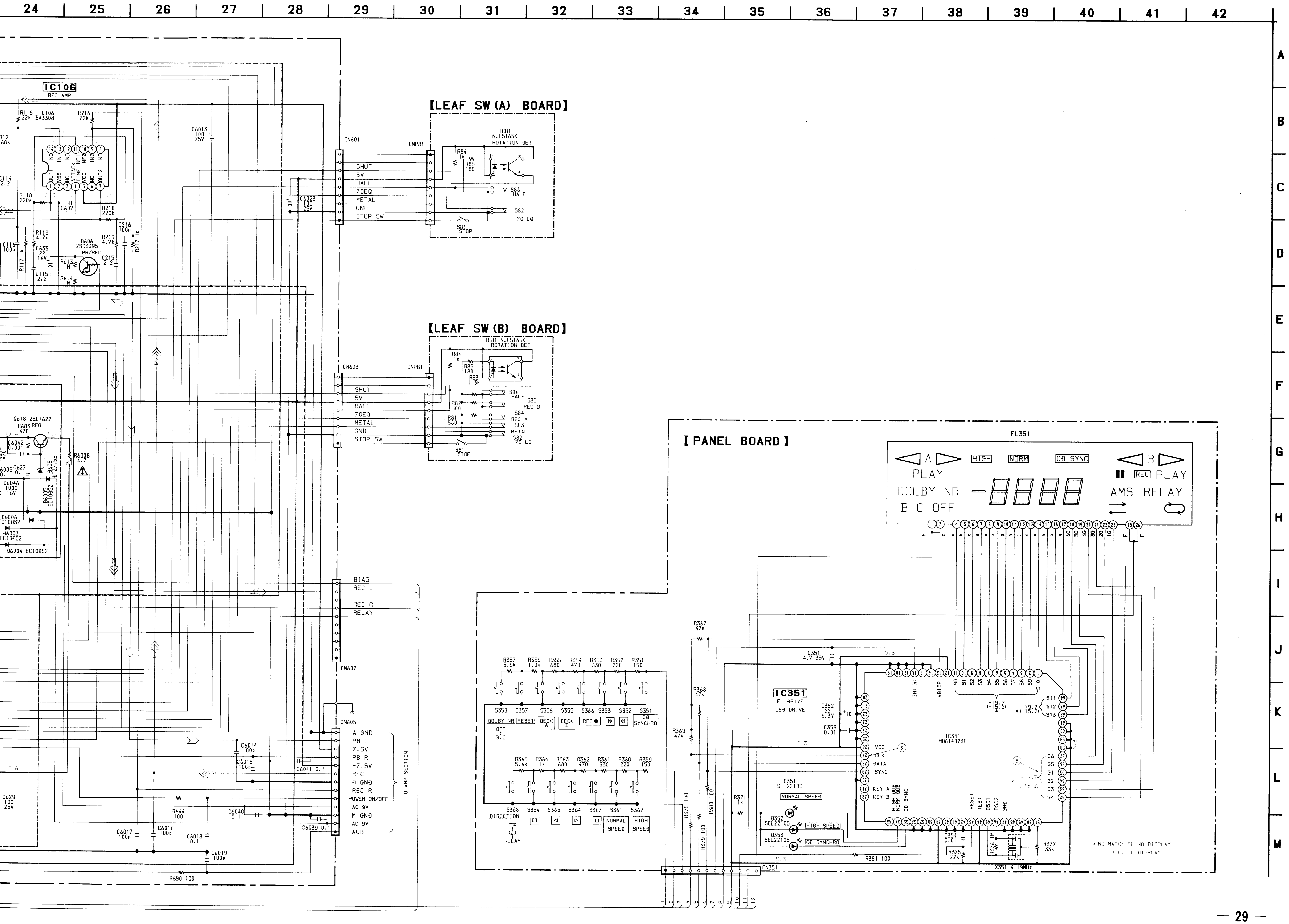
33
IC102
DOLBY NR
IC102 CXA1331M
IC103
REC EQ
IC103 CXA1398M
IC104
AF AMP
IC104 RC4558PS
IC105
PB OUTPUT SWITCH
IC105 MC14066BF
IC106
REC AMP
IC106 BA3308F
Q602 2SA1344 DOLBY B
Q603 2SC3398 DOLBY ON/OFF
Q604 2SA1344 SWITCHING
Q605 2SA1341 SWITCHING
Q102 2SC3859
Q202 2SC3859
MUTING
Q606 2SC3395 PB/REC
Q201 2SC3398 EQ SWITCH
D6012 1SS355
[LEAF SW (A) BOARD]
IC81 NJL5165K ROTATION DET
CN601
CNP81
SHUT
5V
HALF
70EQ
METAL
GND
STOP SW
S86 HALF
S82 70 EQ
S81 STOP
[LEAF SW (B) BOARD]
CN603
S85 REC B
S84 REC A
S83 METAL
S82 70 EQ
S81 STOP
IC604 RC4558PS
IC604
AMS AMP
IC605
REC EQ SWITCH
IC605 MC14052BF
IC603
REEL MOTOR DRIVE
IC603 (1/2) TA7272P
IC603 (2/2) TA7272P
Q618 2SD1622 REG
Q6001 2SD2061 REG
Q6002 2SD2061 REG
Q6004 2SA1235 REG
Q6003 2SD2061 REG
Q611 2SA1344 H/L SPEED DRIVE
Q612 2SC3398 H/L SPEED
Q613 2SC3398 H/L SPEED
Q616 2SB1122S MOTOR DRIVE
Q617 2SB1122S MOTOR DRIVE
IC602 M50925-482FP
IC602
MD CONTROL
IC6001
RESET
IC6001 M51953
X601 4.0MHz
Q609 2SC3398 AUB SWITCH
Q6005 2SC3398 POWER ON/OFF SWITCH
Q620 2SD1622 INVERTER
Q619 2SD1622 INVERTER
T601
BIAS
REC L
REC R
RELAY
CN607
CN605
A GND
PB L
7.5V
PB R
-7.5V
REC L
D GND
REC R
POWER ON/OFF
AC 9V
M GND
AC 9V
AUB
TO AMP SECTION
CN606
S358
S357
S356
S355
S366
S353
S352
DOLBY NR
RESET
DECK A
DECK B
REC ●
OFF B.C
S368
S354
S365
S364
S363
S361
DIRECTION
NORMAL SPEED
RELAY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38
39
40
41
42
A
B
C
D
E
F
G
H
I
J
K
L
M
IC106
REC AMP
R116 22k
IC106 BA3308F
R216 22k
R121 68k
C114 2.2
R118 220k
C607 1
R218 220k
C216 100p
R119 4.7k
C633 22 16V
Q606 2SC3395 PB/REC
R219 4.7k
R217 1k
C116 100p
R117 1k
R613 1M
R614 1M
C215 2.2
C115 2.2
C6013 100 25V
C6023 100 25V
CN601
【LEAF SW (A) BOARD】
CNP81
IC81 NJL5165K ROTATION DET
R84 1k
R85 180
S86 HALF
S82 70 EQ
S81 STOP
SHUT
5V
HALF
70EQ
METAL
GND
STOP SW
【LEAF SW (B) BOARD】
CN603
IC81 NJL5165K ROTATION DET
R83 1.3k
R82 300
R81 560
S85 REC B
S84 REC A
S83 METAL
S82 70 EQ
S81 STOP
Q618 2SD1622
R683 REG 470
C6042 0.001
C6005 0.1
C627 0.1
C6046 1000 16V
D605 DTZ7.5B
D6005 EC10QS2
R6008 4.7
D6006 EC10QS2
D6003 EC10QS2
D6004 EC10QS2
BIAS
REC L
REC R
RELAY
CN607
CN605
A GND
PB L
7.5V
PB R
-7.5V
REC L
D GND
REC R
POWER ON/OFF
AC 9V
M GND
AC 9V
AUB
TO AMP SECTION
C6014 100p
C6015 100p
C6041 0.1
C6040 0.1
C6039 0.1
R644 100
C6017 100p
C6016 100p
C6018 0.1
C6019 100p
R690 100
C629 100 25V
【PANEL BOARD】
FL351
A
HIGH
NORM
CD SYNC
B
PLAY
REC
DOLBY NR
AMS RELAY
B C OFF
R357 5.6k
R356 1.0k
R355 680
R354 470
R353 330
R352 220
R351 150
S358
S357
S356
S355
S366
S353
S352
S351
DOLBY NR
OFF B.C
RESET
DECK A
DECK B
REC ●
CD SYNCHRO
R365 5.6k
R364 1k
R363 680
R362 470
R361 330
R360 220
R359 150
S368
S354
S365
S364
S363
S361
S362
DIRECTION
RELAY
NORMAL SPEED
HIGH SPEED
R367 47k
R368 47k
R369 47k
R378 100
R379 100
R380 100
R371 1k
C351 4.7 35V
IC351
FL DRIVE
LED DRIVE
C352 22 6.3V
C353 0.01
IC351 HD614023F
VCC
CLK
DATA
SYNC
KEY A
KEY B
HIGH NORM CD SYNC
RESET
TEST
OSC1
OSC2
GND
INT
VDISP
D351 SEL2210S
NORMAL SPEED
D352 SEL2210S
HIGH SPEED
D353 SEL2210S
CD SYNCHRO
C354 0.01
R375 22k
R376
R377 33k
R381 100
X351 4.19MHz
CN351
-19.7 (-15.2)
* NO MARK: FL NO DISPLAY
( ): FL DISPLAY
1
2
3
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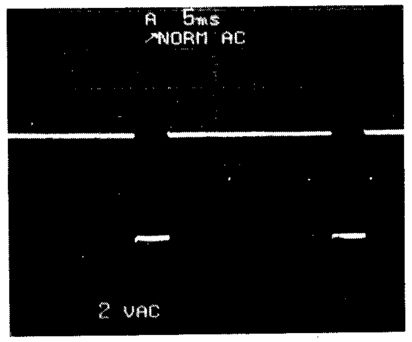
5
6
7
8
9
10
11
12

- WAVEFORMS

①



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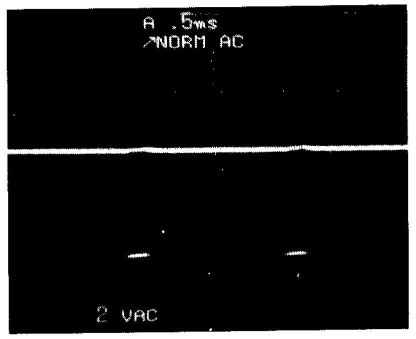

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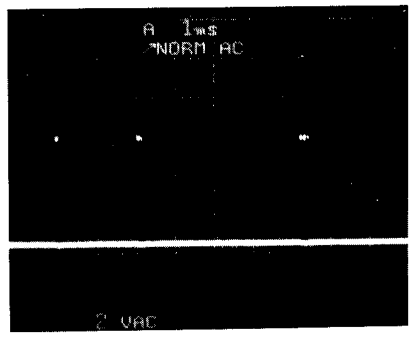
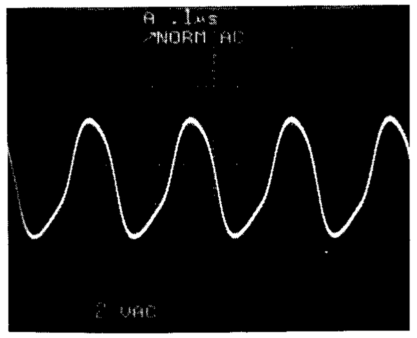


④



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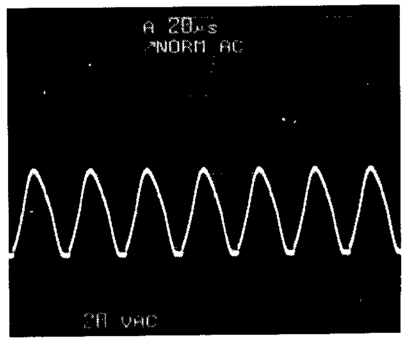

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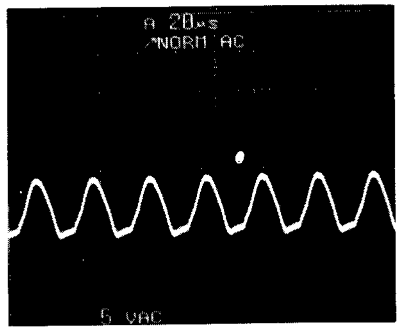

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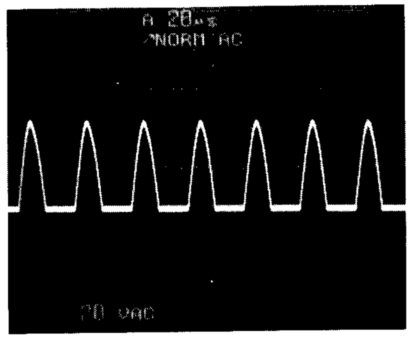

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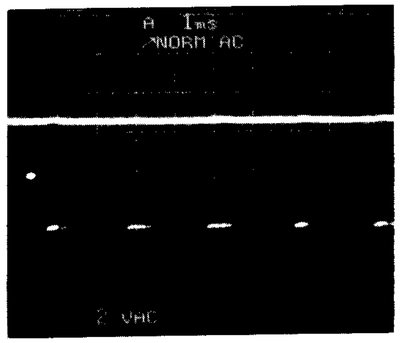

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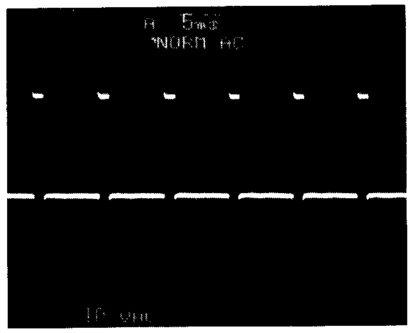
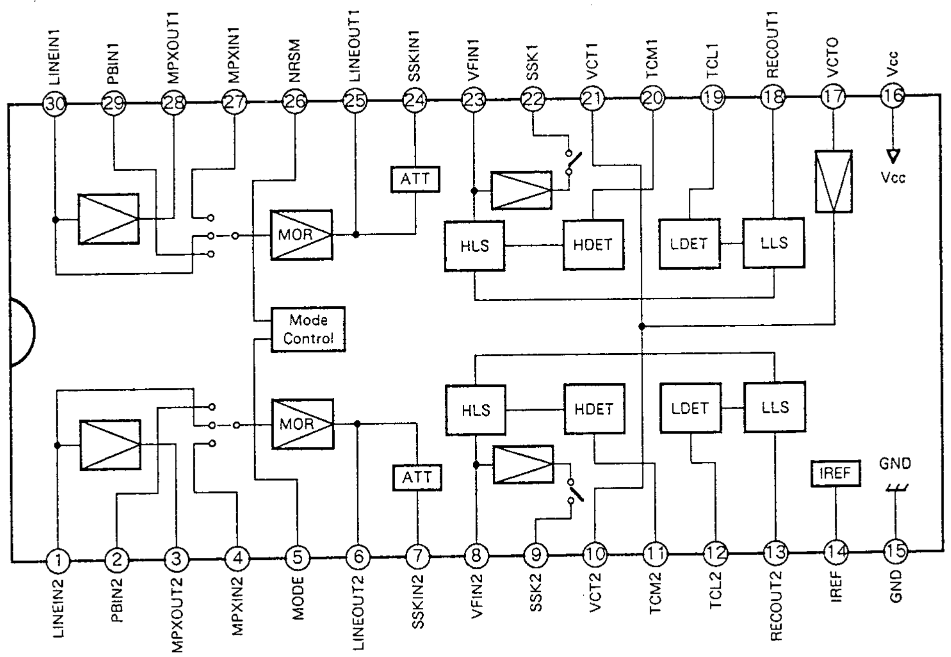
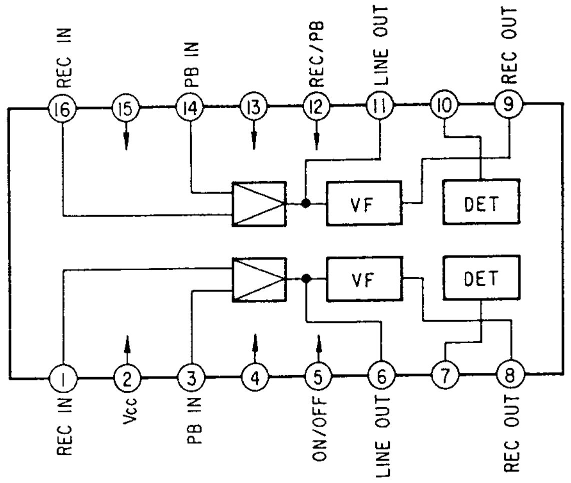


- IC BLOCK DIAGRAMS

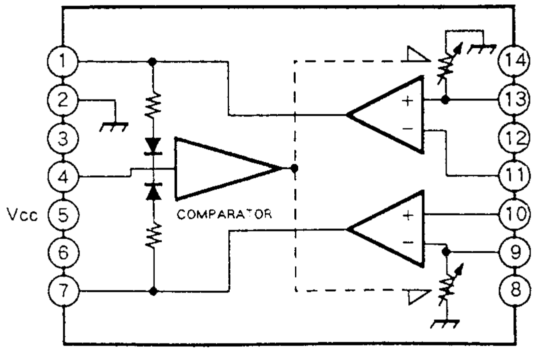
IC102 CXA1331M : AEP, UK, Germany, Australian Model


LINEIN1
PBIN1
MPXOUT1
MPXIN1
NRSM
LINEOUT1
SSKIN1
VFIN1
SSK1
VCT1
TCM1
TCL1
RECOUT1
VCTO
Vcc
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
Vcc
ATT
MOR
HLS
HDET
LDET
LLS
Mode Control
MOR
HLS
HDET
LDET
LLS
ATT
IREF
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
LINEIN2
PBIN2
MPXOUT2
MPXIN2
MODE
LINEOUT2
SSKIN2
VFIN2
SSK2
VCT2
TCM2
TCL2
RECOUT2
IREF
GND

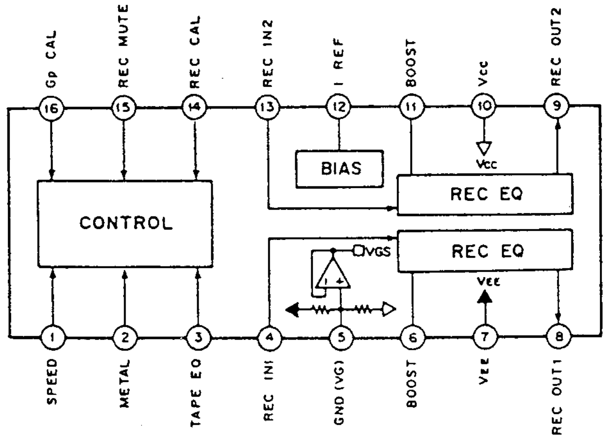
IC102 CXA1101M : US, Canadian, E Model


REC IN
PB IN
REC/PB
LINE OUT
REC OUT
16
15
14
13
12
11
10
9
VF
DET
VF
DET
1
2
3
4
5
6
7
8
REC IN
Vcc
PB IN
ON/OFF
LINE OUT
REC OUT

IC106 BA3308F


1
2
3
4
Vcc
5
6
7
COMPARATOR
14
13
12
11
10
9
8
+
−
+
−

IC103 CXA1398M

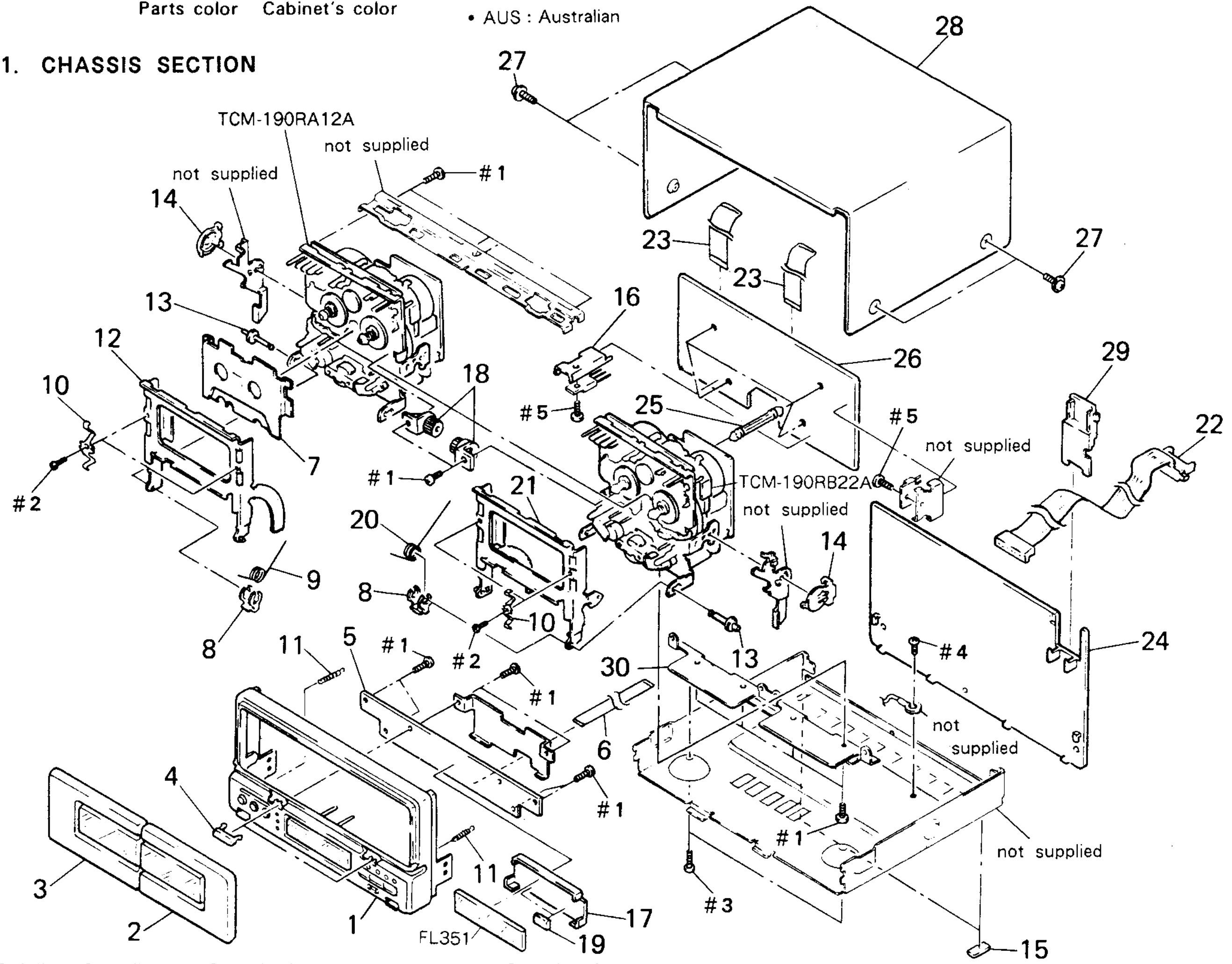

Gp CAL
REC MUTE
REC CAL
REC IN2
I REF
BOOST
Vcc
REC OUT2
16
15
14
13
12
11
10
9
BIAS
Vcc
REC EQ
CONTROL
VGS
REC EQ
VEE
1
2
3
4
5
6
7
8
SPEED
METAL
TAPE EQ
REC IN1
GND (VG)
BOOST
VEE
REC OUT1

SECTION 5
EXPLODED VIEWS

NOTE:

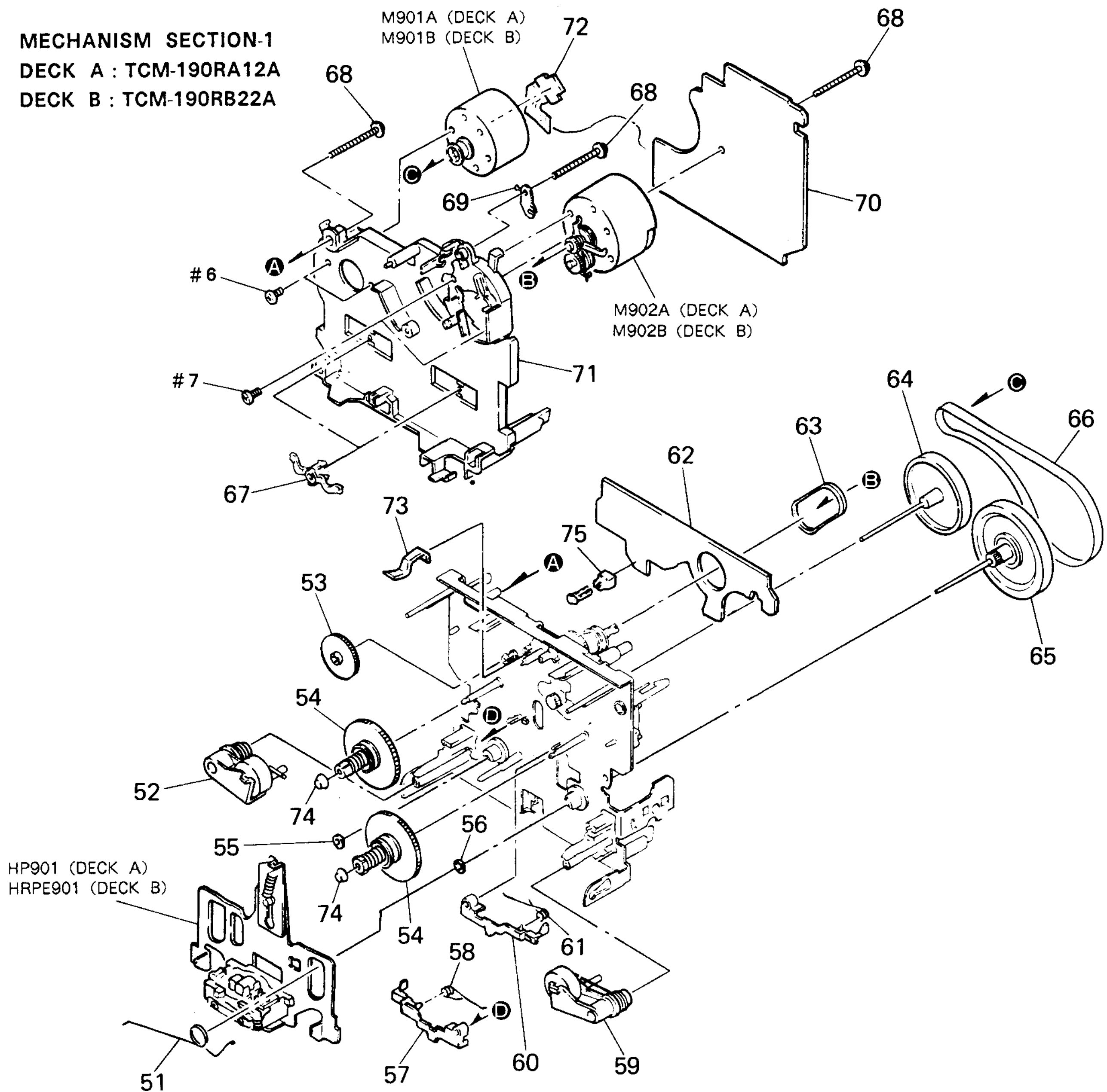
- −XX, −X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE)....(RED)
  ↑ Parts color ↑ Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
  - G : Germany
  - AUS : Australian

5-1. CHASSIS SECTION


28
27
TCM-190RA12A
not supplied
not supplied
#1
14
23
23
27
13
16
12
26
29
10
18
#5
25
#5
22
7
not supplied
#1
TCM-190RB22A
#2
21
not supplied
20
14
9
8
24
10
8
11
5
#1
#2
13
#4
30
#1
not supplied
6
supplied
4
#1
#1
not supplied
11
3
#3
17
2
1
FL351
19
15

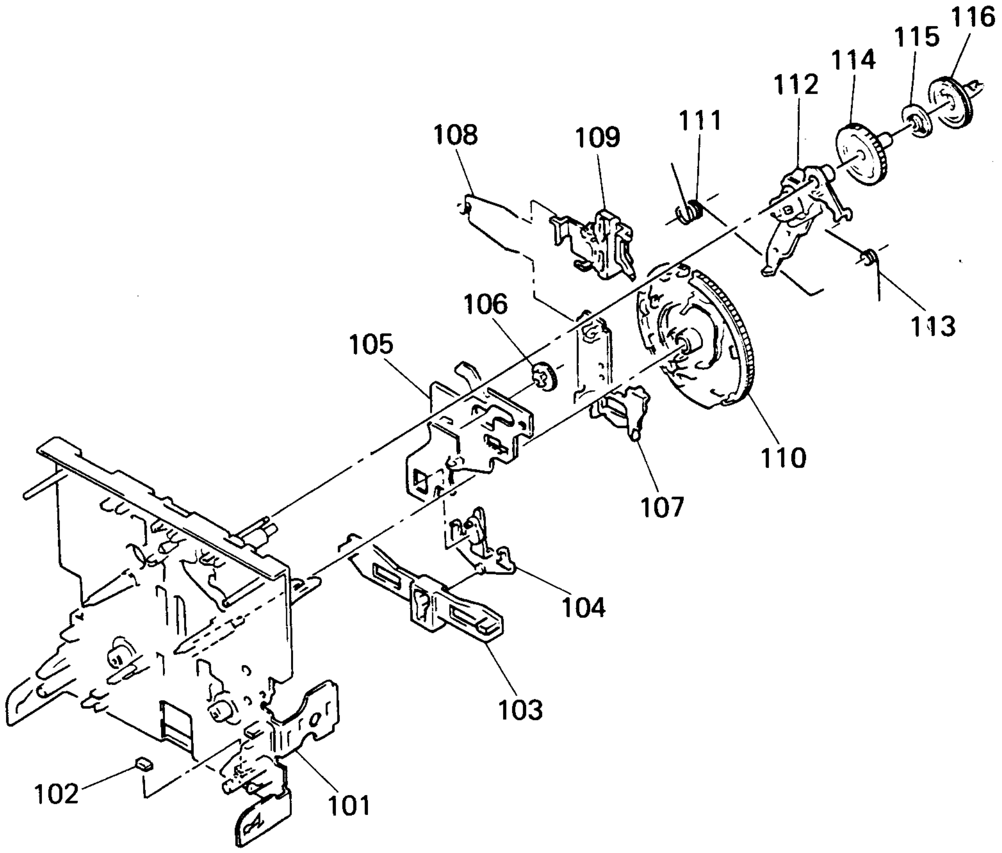
Ref. No.	Part No.	Description	Remark
1	X-3362-860-1	PANEL ASSY, FRONT	
2	X-3362-859-1	LID (B) ASSY, CASSETTE (US, Canadian, E)	
2	X-4941-577-1	LID (B) ASSY, CASSETTE (AEP, UK, G, AUS)	
3	X-3362-858-1	LID (A) ASSY, CASSETTE	
4	3-367-718-01	COVER (AZIMUTH)	
5	* A-2006-424-A	PANEL BOARD, COMPLETE (AEP, UK, G, AUS)	
5	* A-2006-426-A	PANEL BOARD, COMPLETE (US, Canadian, E)	
6	1-590-904-11	WIRE, FLAT TYPE (12 CORE)	
7	3-367-711-01	RETAINER, CASSETTE	
8	3-367-720-01	RING (W), RETAINING	
9	3-354-959-01	SPRING (LOADING L), TORSION	
10	3-340-137-01	SPRING, CASSETTE RETAINER	
11	3-489-099-11	SPRING, TENSION	
12	X-3362-857-1	HOLDER (L) ASSY, CASSETTE	
13	3-367-721-01	SHAFT (FULCRUM SHAFT)	
14	3-354-957-01	JOINT (LOCK LEVER)	
15	4-930-336-01	FOOT (FELT)	
16	* 3-309-144-21	HEAT SINK	
17	* 3-367-839-01	HOLDER, FL TUBE	
18	3-354-963-01	DAMPER	
19	* 4-932-810-11	CUSHION (FL)	
20	3-354-960-01	SPRING (LOADING R), TORSION	
21	X-3362-856-1	HOLDER (R) ASSY, CASSETTE	
22	1-590-579-11	CORD (WITH CONNECTOR)	
23	1-590-902-11	WIRE, FLAT TYPE (9 CORE)	
24	* 3-367-730-01	PANEL, BACK	
25	* 3-682-419-21	HOLDER, P.C.B	
26	* A-2006-423-A	MAIN BOARD, COMPLETE (AEP, UK, G, AUS)	
26	* A-2006-425-A	MAIN BOARD, COMPLETE (US, Canadian, E)	
27	3-704-366-01	SCREW (CASE) (M3X8)	
28	* 4-944-213-01	CASE	
29	* 4-930-344-01	HOLDER (CONNECTION CORD)	
30	* 3-367-724-01	JOINT (LOWER)	
FL351	1-519-638-11	INDICATOR TUBE, FLUORESCENT	

5-2. MECHANISM SECTION-1
DECK A : TCM-190RA12A
DECK B : TCM-190RB22A


M901A (DECK A)
M901B (DECK B)
72
68
68
68
69
70
A
B
#6
M902A (DECK A)
M902B (DECK B)
71
#7
64
C
66
63
62
B
67
73
75
A
53
54
D
52
74
56
55
HP901 (DECK A)
HRPE901 (DECK B)
74
54
61
58
D
60
59
57
51
65

Ref. No.	Part No.	Description	Remark
51	3-359-455-01	SPRING, TORSION	
52	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY	
53	3-359-424-01	GEAR (REV GEAR)	
54	X-3359-404-1	TABLE ASSY, REEL	
55	3-356-714-01	WASHER	
56	3-356-713-01	WASHER	
57	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
58	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
59	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
60	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
61	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
62	* 1-634-841-11	LEAF SW (A), (B) BOARD	
63	3-359-466-01	BELT (FR), SQUARE	
64	X-3359-410-1	FLYWHEEL (REV) ASSY	
65	X-3359-406-1	FLYWHEEL (FWD) COMPLETE ASSY	
66	3-359-417-01	BELT (FLAT), CAPSTAN	
67	3-575-321-00	RETAINER, THRUST, CAPSTAN	
68	3-359-414-01	SCREW (+PTPWH 2X23)	
69	3-359-450-01	PLATE, GROUND	
70	* A-2006-399-A	MOUNTED PCB (RA12A), AUDIO (DECK A)	
70	* A-2006-400-A	MOUNTED PCB (RB22A), AUDIO (DECK B)	
71	* 3-359-436-01	BASE (THRUST RETAINER), FITTING	
72	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
73	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF	
74	3-362-308-01	CAP (REEL)	
75	3-343-419-01	HOLDER (S SENSER A)	
HP901	A-2003-837-A	BASE ASSY, HEAD (DECK A)	
HRPE901	A-2003-838-A	BASE ASSY, HEAD (DECK B)	
M901A	X-3359-417-1	MOTOR ASSY, CAPSTAN	
M901B	X-3359-417-1	MOTOR ASSY, CAPSTAN	
M902A	X-3363-501-1	MOTOR ASSY, REEL	
M902B	X-3363-501-1	MOTOR ASSY, REEL	

5-3. MECHANISM SECTION-2



Ref. No.	Part No.	Description	Remark
101	X-3359-415-1	CHASSIS ASSY, MECHANICAL	
102	3-359-469-01	SPACER	
103	* 3-359-425-01	SLIDER (REVERSE SLIDER)	
104	3-359-426-01	LEVER (REVERSE LEVER)	
105	* 3-359-415-01	SLIDER (TRIGGER SLIDER)	
106	3-359-448-01	GEAR (TRIGGER)	
107	* 3-359-427-01	SLIDER (LEVERSE SLIDER)	
108	3-359-454-01	SPRING, TORSION	
109	3-359-429-01	SLIDER (BRAKE PLATE)	
110	3-359-420-01	GEAR (CAM GEAR)	
111	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
112	X-3359-405-1	LEVER (FR ARM) ASSY	
113	3-359-453-01	SPRING (FR ARM), TORSION	
114	3-359-419-01	GEAR (FR GEAR)	
115	3-359-421-01	CLUTCH (REEL DISK)	
116	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 6
ELECTRICAL PARTS LIST

LEAF SW(A) **LEAF SW(B)** **MAIN**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- −XX, −X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA.... : μA...., uPA.... : μPA....
  uPB.... : μPB...., uPC.... : μPC....
  uPD.... : μPD....
- CAPACITORS
  uF : μF
- COILS
  uH : μH

• G : Germany
• AUS : Australian

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark
	* 1-634-841-11	LEAF SW (A) BOARD *****************	
	3-343-419-01	HOLDER (S SENSER A)	
		< CONNECTOR >	
CNP81	* 1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81	8-719-710-03	IC PHOTO REFLECTOR NJL5165K-B	
		< RESISTOR >	
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)	
S82	1-571-281-21	SWITCH, LEAF (70EQ)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	

****

Ref. No.	Part No.	Description	Remark
	* 1-634-841-11	LEAF SW (B) BOARD *****************	
	3-343-419-01	HOLDER (S SENSER A)	
		< CONNECTOR >	
CNP81	* 1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81	8-719-710-03	IC PHOTO REFLECTOR NJL5165K-B	

Ref. No.	Part No.	Description	Remark
		< RESISTOR >	
R81	1-249-414-11	CARBON 560 5% 1/4W	
R82	1-247-818-11	CARBON 300 5% 1/4W	
R83	1-247-834-11	CARBON 1.3K 5% 1/4W	
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)	
S82	1-571-281-21	SWITCH, LEAF (70EQ)	
S83	1-571-281-21	SWITCH, LEAF (METAL)	
S84	1-571-281-21	SWITCH, LEAF (REC A)	
S85	1-571-281-21	SWITCH, LEAF (REC B)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	

****

Ref. No.	Part No.	Description	Remark
	* A-2006-423-A	MAIN BOARD, COMPLETE (AEP, UK, G, AUS)	
	* A-2006-425-A	MAIN BOARD, COMPLETE (US, Canadian, E) ***********************************	
	* 3-309-144-21	HEAT SINK	
		< CAPACITOR >	
C101	1-136-158-00	FILM 0.027uF 5% 50V	
C102	1-163-013-11	CERAMIC CHIP 0.0022uF 10% 25V	(US, Canadian, E)
C102	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	(AEP, UK, G, AUS)
C103	1-163-013-11	CERAMIC CHIP 0.0022uF 10% 25V	(US, Canadian, E)
C103	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	(AEP, UK, G, AUS)

MAIN

Ref.No.	Part No.	Description			Remark
C104	1-130-475-00	MYLAR	0.0022uF	5%	50V (AEP, UK, G, AUS)
C105	1-130-475-00	MYLAR	0.0022uF	5%	50V (AEP, UK, G, AUS)
C106	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C107	1-124-254-00	ELECT	0.68uF	20%	50V (US, Canadian, E)
C107	1-136-174-00	FILM	0.56uF	5%	50V (AEP, UK, G, AUS)
C108	1-136-171-00	FILM	0.33uF	5%	50V (AEP, UK, G, AUS)
C109	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C110	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C111	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C112	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C113	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C114	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C115	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C116	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C201	1-136-158-00	FILM	0.027uF	5%	50V
C202	1-163-013-11	CERAMIC CHIP	0.0022uF	10%	25V (US, Canadian, E)
C202	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V (AEP, UK, G, AUS)
C203	1-163-013-11	CERAMIC CHIP	0.0022uF	10%	25V (US, Canadian, E)
C203	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V (AEP, UK, G, AUS)
C204	1-130-475-00	MYLAR	0.0022uF	5%	50V (AEP, UK, G, AUS)
C205	1-130-475-00	MYLAR	0.0022uF	5%	50V (AEP, UK, G, AUS)
C206	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C207	1-124-254-00	ELECT	0.68uF	20%	50V (US, Canadian, E)
C207	1-136-174-00	FILM	0.56uF	5%	50V (AEP, UK, G, AUS)
C208	1-136-171-00	FILM	0.33uF	5%	50V (AEP, UK, G, AUS)
C209	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C210	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C211	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C212	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C213	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C214	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C215	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C216	1-163-117-00	CERAMIC CHIP	100PF	5%	50V

Ref.No.	Part No.	Description			Remark
C601	1-164-346-11	CERAMIC CHIP	1uF		16V
C602	1-164-346-11	CERAMIC CHIP	1uF		16V
C603	1-164-346-11	CERAMIC CHIP	1uF		16V
C604	1-164-346-11	CERAMIC CHIP	1uF		16V
C605	1-164-346-11	CERAMIC CHIP	1uF		16V
C606	1-164-346-11	CERAMIC CHIP	1uF		16V
C607	1-164-346-11	CERAMIC CHIP	1uF		16V
C608	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C609	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C610	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C611	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C612	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C615	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C616	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C617	1-124-478-11	ELECT	100uF	20%	25V
C618	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C619	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C620	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C621	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C622	1-124-478-11	ELECT	100uF	20%	25V
C623	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C624	1-124-478-11	ELECT	100uF	20%	25V
C625	1-124-907-11	ELECT	10uF	20%	50V
C626	1-124-907-11	ELECT	10uF	20%	50V
C627	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C629	1-124-478-11	ELECT	100uF	20%	25V
C632	1-136-594-11	FILM	0.018uF	5%	100V
C633	1-124-234-00	ELECT	22uF	20%	16V
C639	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C862	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6001	1-124-360-00	ELECT	1000uF	20%	16V
C6002	1-124-360-00	ELECT	1000uF	20%	16V
C6003	1-124-360-00	ELECT	1000uF	20%	16V
C6004	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6005	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6006	1-124-360-00	ELECT	1000uF	20%	16V
C6007	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6008	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6009	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6010	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6011	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C6012	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C6013	1-124-478-11	ELECT	100uF	20%	25V
C6014	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C6015	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C6016	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C6017	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C6018	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6019	1-163-117-00	CERAMIC CHIP	100PF	5%	50V

MAIN

Ref. No.	Part No.	Description	Remark
C6023	1-123-332-00	ELECT 47uF 20% 16V	(US, Canadian, E)
C6023	1-124-478-11	ELECT 100uF 20% 25V	(AEP, UK, G, AUS)
C6024	1-124-478-11	ELECT 100uF 20% 25V	(US, Canadian, E)
C6024	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(AEP, UK, G, AUS)
C6025	1-124-478-11	ELECT 100uF 20% 25V	(US, Canadian, E)
C6025	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(AEP, UK, G, AUS)
C6031	1-164-346-11	CERAMIC CHIP 1uF 16V	
C6035	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C6036	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C6038	1-124-907-11	ELECT 10uF 20% 50V	
C6039	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C6040	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C6041	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C6042	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(AEP, UK, G, AUS)
C6042	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(US, Canadian, E)
C6043	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(US, Canadian, E)
C6044	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(US, Canadian, E)
C6046	1-124-360-00	ELECT 1000uF 20% 16V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN602	1-580-783-11	CONNECTOR, BOARD TO BOARD	
CN604	1-580-783-11	CONNECTOR, BOARD TO BOARD	
CN606	1-568-795-11	SOCKET, CONNECTOR 12P	
CN607	1-580-783-11	CONNECTOR, BOARD TO BOARD	

< DIODE >

Ref. No.	Part No.	Description	Remark
D601	8-719-977-26	DIODE DTZ10	(AEP, UK, G, AUS)
D602	8-719-988-62	DIODE 1SS355	
D603	8-719-988-62	DIODE 1SS355	
D604	8-719-210-33	DIODE EC10DS2	
D605	8-719-977-16	DIODE DTZ7.5B	
D606	8-719-977-00	DIODE DTZ5.1C	
D607	8-719-988-62	DIODE 1SS355	
D6001	8-719-977-26	DIODE DTZ101	(US, Canadian, E)
D6002	8-719-977-26	DIODE DTZ101	(US, Canadian, E)
D6003	8-719-210-33	DIODE EC10DS2	
D6004	8-719-210-33	DIODE EC10DS2	
D6005	8-719-210-33	DIODE EC10DS2	
D6006	8-719-210-33	DIODE EC10DS2	
D6007	8-719-977-04	DIODE DTZ5.6C	
D6008	8-719-977-04	DIODE DTZ5.6C	
D6009	8-719-977-16	DIODE DTZ7.5B	
D6010	8-719-988-62	DIODE 1SS355	
D6011	8-719-988-62	DIODE 1SS355	
D6012	8-719-988-62	DIODE 1SS355	

< IC >

Ref. No.	Part No.	Description	Remark
IC101	8-759-300-71	IC HD14053BFP	
IC102	8-752-037-90	IC CXA1331M	(AEP, UK, G, AUS)
IC102	8-752-050-13	IC CXA1101M	(US, Canadian, E)
IC103	8-752-056-00	IC CXA1398M	
IC104	8-759-981-95	IC RC4558-S	
IC105	8-759-516-47	IC CD4066BCM	
IC106	8-759-998-71	IC BA3308F	
IC601	8-759-636-37	IC M50944-121FP	
IC602	8-759-636-67	IC M50925-482FP	
IC603	8-759-207-05	IC TA7272P	
IC604	8-759-981-95	IC RC4558-S	
IC605	8-759-516-41	IC CD4052BCM	(US, Canadian, E)
IC605	8-759-009-06	IC MC14052BF	(AEP, UK, G, AUS)
IC6001	8-759-634-43	IC M51953BFP	

< COIL >

Ref. No.	Part No.	Description	Remark
L601	1-410-761-11	INDUCTOR 0.68mH	
L6001	1-410-482-31	INDUCTOR 100uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q101	8-729-805-41	TRANSISTOR 2SC3398	
Q102	8-729-805-42	TRANSISTOR 2SC3859	
Q201	8-729-805-41	TRANSISTOR 2SC3398	
Q202	8-729-805-42	TRANSISTOR 2SC3859	
Q601	8-729-805-65	TRANSISTOR 2SA1344	(AEP, UK, G, AUS)
Q602	8-729-805-65	TRANSISTOR 2SA1344	(AEP, UK, G, AUS)
Q603	8-729-805-41	TRANSISTOR 2SC3398	(AEP, UK, G, AUS)
Q604	8-729-805-65	TRANSISTOR 2SA1344	
Q605	8-729-805-69	TRANSISTOR 2SA1341	
Q606	8-729-805-45	TRANSISTOR 2SC3395	
Q607	8-729-805-65	TRANSISTOR 2SA1344	
Q608	8-729-805-65	TRANSISTOR 2SA1344	

MAIN

Ref. No.	Part No.	Description	Remark
Q609	8-729-805-41	TRANSISTOR 2SC3398	
Q611	8-729-805-65	TRANSISTOR 2SA1344	
Q612	8-729-805-41	TRANSISTOR 2SC3398	
Q613	8-729-805-41	TRANSISTOR 2SC3398	
Q616	8-729-820-86	TRANSISTOR 2SB1121-ST	
Q617	8-729-820-86	TRANSISTOR 2SB1121-ST	
Q618	8-729-808-01	TRANSISTOR 2SD1622-S	
Q619	8-729-808-01	TRANSISTOR 2SD1622-S	
Q620	8-729-808-01	TRANSISTOR 2SD1622-S	
Q6001	8-729-111-55	TRANSISTOR 2SD1312-K	
Q6002	8-729-111-55	TRANSISTOR 2SD1312-K	
Q6003	8-729-111-55	TRANSISTOR 2SD1312-K	
Q6004	8-729-600-22	TRANSISTOR 2SA1235-F	
Q6005	8-729-805-41	TRANSISTOR 2SC3398	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R101	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R102	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R103	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R104	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R105	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R107	1-216-082-00	METAL GLAZE 24K 5% 1/10W	(AEP, UK, G, AUS)
R108	1-216-043-00	METAL CHIP 560 5% 1/10W	(AEP, UK, G, AUS)
R109	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R110	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R111	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R112	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R113	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R114	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R115	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R116	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R117	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R118	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R119	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R120	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R121	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R201	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R202	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R203	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R204	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R205	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R206	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R207	1-216-082-00	METAL GLAZE 24K 5% 1/10W	(AEP, UK, G, AUS)
R208	1-216-043-00	METAL CHIP 560 5% 1/10W	(AEP, UK, G, AUS)
R209	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R210	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R211	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R212	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R213	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R214	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R215	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R216	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R217	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R218	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R219	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R220	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R221	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R601	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R602	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R603	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(AEP, UK, G, AUS)
R603	1-216-073-00	METAL CHIP 10K 5% 1/10W	(US, Canadian, E)
R605	1-216-081-00	METAL CHIP 22K 5% 1/10W	(AEP, UK, G, AUS)
R605	1-216-089-00	METAL CHIP 47K 5% 1/10W	(US, Canadian, E)
R606	1-216-081-00	METAL CHIP 22K 5% 1/10W	(AEP, UK, G, AUS)
R606	1-216-089-00	METAL CHIP 47K 5% 1/10W	(US, Canadian, E)
R607	1-216-073-00	METAL CHIP 10K 5% 1/10W	(US, Canadian, E)
R607	1-216-081-00	METAL CHIP 22K 5% 1/10W	(AEP, UK, G, AUS)
R608	1-216-049-00	METAL CHIP 1K 5% 1/10W	(AEP, UK, G, AUS)
R608	1-216-088-00	METAL CHIP 43K 5% 1/10W	(US, Canadian, E)
R609	1-216-083-00	METAL CHIP 27K 5% 1/10W	(AEP, UK, G, AUS)
R611	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R612	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R613	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R614	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R615	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R616	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R617	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R618	1-216-097-00	METAL CHIP 100K 5% 1/10W	

MAIN

Ref. No.	Part No.	Description			Remark
R619	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R620	1-216-097-00	METAL CHIP	100K	5%	1/10W
R621	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R623	1-216-113-00	METAL CHIP	470K	5%	1/10W
R624	1-216-041-00	METAL CHIP	470	5%	1/10W
R625	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R626	1-216-073-00	METAL CHIP	10K	5%	1/10W
R628	1-216-073-00	METAL CHIP	10K	5%	1/10W
R629	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R630	1-216-081-00	METAL CHIP	22K	5%	1/10W
R631	1-216-081-00	METAL CHIP	22K	5%	1/10W
R634	1-216-081-00	METAL CHIP	22K	5%	1/10W
R635	1-216-081-00	METAL CHIP	22K	5%	1/10W
R636	1-216-081-00	METAL CHIP	22K	5%	1/10W
R637	1-216-081-00	METAL CHIP	22K	5%	1/10W
R638	1-216-081-00	METAL CHIP	22K	5%	1/10W
R639	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R640	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R641	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R642	1-216-089-00	METAL CHIP	47K	5%	1/10W
R643	1-216-089-00	METAL CHIP	47K	5%	1/10W
R644	1-216-025-00	METAL CHIP	100	5%	1/10W
R645	1-216-089-00	METAL CHIP	47K	5%	1/10W
R646	1-216-081-00	METAL CHIP	22K	5%	1/10W
R647	1-216-025-00	METAL CHIP	100	5%	1/10W
R648	1-216-025-00	METAL CHIP	100	5%	1/10W
R649	1-216-025-00	METAL CHIP	100	5%	1/10W
R650	1-216-121-00	METAL CHIP	1M	5%	1/10W
R651	1-216-081-00	METAL CHIP	22K	5%	1/10W
R652	1-216-081-00	METAL CHIP	22K	5%	1/10W
R653	1-216-073-00	METAL CHIP	10K	5%	1/10W
R654	1-216-073-00	METAL CHIP	10K	5%	1/10W
R655	1-216-121-00	METAL CHIP	1M	5%	1/10W
R656	1-216-073-00	METAL CHIP	10K	5%	1/10W
R661	1-216-083-00	METAL CHIP	27K	5%	1/10W
R662	1-216-083-00	METAL CHIP	27K	5%	1/10W
R663	1-216-073-00	METAL CHIP	10K	5%	1/10W
R664	1-216-045-00	METAL CHIP	680	5%	1/10W
R665	1-216-073-00	METAL CHIP	10K	5%	1/10W
R666	1-216-045-00	METAL CHIP	680	5%	1/10W
R667	1-216-025-00	METAL CHIP	100	5%	1/10W
R668	1-216-090-00	METAL CHIP	51K	5%	1/10W
R669	1-216-089-00	METAL CHIP	47K	5%	1/10W
R670	1-216-084-00	METAL GLAZE	30K	5%	1/10W
R671	1-216-090-00	METAL CHIP	51K	5%	1/10W
R672	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R673	1-216-080-00	METAL CHIP	20K	5%	1/10W
R674	1-216-083-00	METAL CHIP	27K	5%	1/10W
R675	1-216-080-00	METAL CHIP	20K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R676	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R677	1-216-089-00	METAL CHIP	47K	5%	1/10W
R678	1-216-084-00	METAL GLAZE	30K	5%	1/10W
R679	1-216-083-00	METAL CHIP	27K	5%	1/10W
R680	1-216-090-00	METAL CHIP	51K	5%	1/10W
R681	1-216-090-00	METAL CHIP	51K	5%	1/10W
R682	1-216-025-00	METAL CHIP	100	5%	1/10W
R683	1-216-041-00	METAL CHIP	470	5%	1/10W
R686	1-216-077-00	METAL CHIP	15K	5%	1/10W
R687	1-216-077-00	METAL CHIP	15K	5%	1/10W
R690	1-216-025-00	METAL CHIP	100	5%	1/10W
R691	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R692	1-216-081-00	METAL CHIP	22K	5%	1/10W
R693	1-216-025-00	METAL CHIP	100	5%	1/10W
R696	1-216-081-00	METAL CHIP	22K	5%	1/10W
R699	1-216-081-00	METAL CHIP	22K	5%	1/10W
R700	1-216-073-00	METAL CHIP	10K	5%	1/10W
R6001	1-216-041-00	METAL CHIP	470	5%	1/10W
R6002	1-216-041-00	METAL CHIP	470	5%	1/10W
R6003	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R6004	1-216-089-00	METAL CHIP	47K	5%	1/10W
R6005	1-216-089-00	METAL CHIP	47K	5%	1/10W
R6006	1-216-049-00	METAL CHIP	1K	5%	1/10W
R6007	1-216-073-00	METAL CHIP	10K	5%	1/10W
R6008 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R6009 ⚠	1-219-137-11	FUSIBLE	0.33	10%	1/4W F
R6010 ⚠	1-219-137-11	FUSIBLE	0.33	10%	1/4W F
R9031	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R9032	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R9033	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R9034	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R9035	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R9036	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R9037	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R9038	1-216-298-00	METAL CHIP	2.2	5%	1/10W

< TRANSFORMER >

T601	1-450-458-11	TRANSFORMER, DC-DC CONVERTER			

< TEST PIN >

TP601 *	1-564-517-11	PLUG, CONNECTOR 2P			

< CERAMIC >

X601	1-577-358-21	VIBRATOR, CERAMIC			

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

AUDIO(DECK A) AUDIO(DECK B)

* A-2006-399-A MOUNTED PCB, AUDIO (DECK A)
****

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C71	1-164-346-11	CERAMIC CHIP	1uF		16V

< CONNECTOR >

Ref. No.	Part No.	Description
CNJ31	* 1-580-782-11	CONNECTOR, BOARD TO BOARD
CNP32	* 1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P
CNP71	* 1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P
CNP72	* 1-580-411-11	SOCKET, CONNECTOR 4P

< IC >

Ref. No.	Part No.	Description
IC31	8-759-970-66	IC LM833M

< JUMPER >

Ref. No.	Part No.	Description			Remark
JW1	1-216-295-00	METAL CHIP	0	5%	1/10W
JW51	1-216-296-00	METAL CHIP	0	5%	1/8W
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W

< TRANSISTOR >

Ref. No.	Part No.	Description
Q71	8-729-602-36	TRANSISTOR 2SA1602

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-025-00	METAL CHIP	100	5%	1/10W
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV11	1-238-012-11	RES, ADJ, CARBON 1K (PB LEVEL L)
RV21	1-238-012-11	RES, ADJ, CARBON 1K (PB LEVEL R)
RV71	1-238-016-11	RES, ADJ, CARBON 10K (NORMAL SPEED)
RV72	1-238-016-11	RES, ADJ, CARBON 10K (HIGH SPEED)

****

* A-2006-400-A MOUNTED PCB, AUDIO (DECK B)
****

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C14	1-136-273-91	FILM	75PF	5%	630V
C15	1-164-080-11	CERAMIC	390PF	10%	50V
C17	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C24	1-136-273-91	FILM	75PF	5%	630V
C25	1-164-080-11	CERAMIC	390PF	10%	50V
C27	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C33	1-124-234-00	ELECT	22uF	20%	16V
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C52	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C53	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C54	1-136-559-11	FILM	0.0047uF	5%	630V
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C57	1-164-346-11	CERAMIC CHIP	1uF		16V
C58	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C71	1-164-346-11	CERAMIC CHIP	1uF		16V

< CONNECTOR >

Ref. No.	Part No.	Description
CNJ31	* 1-580-782-11	CONNECTOR, BOARD TO BOARD
CNJ33	* 1-580-782-11	CONNECTOR, BOARD TO BOARD
CNP32	* 1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P
CNP71	* 1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P
CNP72	* 1-580-411-11	SOCKET, CONNECTOR 4P

Ref. No.	Part No.	Description				Remark
		< DIODE >				
D31	8-719-988-62	DIODE 1SS355				
		< IC >				
IC31	8-759-970-66	IC LM833M				
		< JUMPER >				
JW1	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW2	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW3	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW4	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW5	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW6	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW7	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW55	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW56	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW57	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW58	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW59	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW60	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW61	1-216-296-00	METAL CHIP	0	5%	1/8W	
		< COIL >				
L11	1-410-780-11	INDUCTOR	27mH			
L21	1-410-780-11	INDUCTOR	27mH			
		< TRANSISTOR >				
Q51	8-729-808-01	TRANSISTOR 2SD1622				
Q52	8-729-808-01	TRANSISTOR 2SD1622				
Q53	8-729-808-01	TRANSISTOR 2SD1622				
Q71	8-729-602-36	TRANSISTOR 2SA1602				
		< RESISTOR >				
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R12	1-216-025-00	METAL CHIP	100	5%	1/10W	
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W	
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R15	1-249-430-11	CARBON	12K	5%	1/4W	
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R22	1-216-025-00	METAL CHIP	100	5%	1/10W	
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W	
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R25	1-249-430-11	CARBON	12K	5%	1/4W	
R31	1-216-033-00	METAL CHIP	220	5%	1/10W	
R32	1-216-033-00	METAL CHIP	220	5%	1/10W	
R41	1-249-393-11	CARBON	10	5%	1/4W	
R42	1-249-393-11	CARBON	10	5%	1/4W	
R51	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R52	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W	
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W	
R56	1-216-298-00	METAL CHIP	2.2	5%	1/10W	
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV11	1-238-012-11	RES, ADJ, CARBON 1K (PB LEVEL L)				
RV12	1-238-551-11	RES, ADJ, CARBON 220K (REC BIAS L)				
RV21	1-238-012-11	RES, ADJ, CARBON 1K (PB LEVEL R)				
RV22	1-238-551-11	RES, ADJ, CARBON 220K (REC BIAS R)				
RV71	1-238-016-11	RES, ADJ, CARBON 10K (NORMAL SPEED)				
RV72	1-238-016-11	RES, ADJ, CARBON 10K (HIGH SPEED)				
		< RELAY >				
RY31	1-515-726-11	RELAY				
		< COIL >				
T51	1-406-419-11	COIL, BIAS OSCILLATION				

****

Ref. No.	Part No.	Description				Remark
*	A-2006-424-A	PANEL BOARD, COMPLETE (AEP, UK, G, AUS)				
*	A-2006-426-A	PANEL BOARD, COMPLETE (US, Canadian, E)				

****

Ref. No.	Part No.	Description				Remark
*	3-367-839-01	HOLDER, FL TUBE				
*	4-932-810-11	CUSHION (FL)				
		< CAPACITOR >				
C351	1-126-163-11	ELECT	4.7uF	20%	50V	
C352	1-124-638-11	ELECT	22uF	20%	10V	
C353	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C354	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
		< CONNECTOR >				
CN351	1-580-883-41	SOCKET, CONNECTOR (SMT) 12P				

PANEL

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D351	8-719-301-37	LED SEL2210S-CD (NORMAL SPEED)	
D352	8-719-301-37	LED SEL2210S-CD (HIGH SPEED)	
D353	8-719-301-37	LED SEL2210S-CD (CD SYNCHRO)	
		< FLUORESCENT >	
FL351	1-519-638-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC351	8-759-323-35	IC HD-614023-FA93	
		< RESISTOR >	
R351	1-216-029-00	METAL CHIP 150 5% 1/10W	
R352	1-216-033-00	METAL CHIP 220 5% 1/10W	
R353	1-216-037-00	METAL CHIP 330 5% 1/10W	
R354	1-216-041-00	METAL CHIP 470 5% 1/10W	
R355	1-216-045-00	METAL CHIP 680 5% 1/10W	
R356	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R357	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	(US, Canadian, E)
R357	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(AEP, UK, G, AUS)
R359	1-216-029-00	METAL CHIP 150 5% 1/10W	
R360	1-216-033-00	METAL CHIP 220 5% 1/10W	
R361	1-216-037-00	METAL CHIP 330 5% 1/10W	
R362	1-216-041-00	METAL CHIP 470 5% 1/10W	
R363	1-216-045-00	METAL CHIP 680 5% 1/10W	
R364	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R365	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R366	1-216-295-00	METAL CHIP 0 5% 1/10W	
R367	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R368	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R369	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R371	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R375	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R376	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R377	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R378	1-216-025-00	METAL CHIP 100 5% 1/10W	
R379	1-216-025-00	METAL CHIP 100 5% 1/10W	
R380	1-216-025-00	METAL CHIP 100 5% 1/10W	
R381	1-216-025-00	METAL CHIP 100 5% 1/10W	
		< SWITCH >	
S351	1-572-184-11	SWITCH, KEYBOARD (CD SYNCHRO)	
S352	1-572-184-11	SWITCH, KEYBOARD (◁◁)	
S353	1-572-184-11	SWITCH, KEYBOARD (▷▷)	
S354	1-572-184-11	SWITCH, KEYBOARD (▯▯)	
S355	1-572-184-11	SWITCH, KEYBOARD (DECK B)	

Ref. No.	Part No.	Description	Remark
S356	1-572-184-11	SWITCH, KEYBOARD (DECK A)	
S357	1-572-184-11	SWITCH, KEYBOARD (RESET)	
S358	1-572-184-11	SWITCH, KEYBOARD (DOLBY NR)	
S361	1-572-184-11	SWITCH, KEYBOARD (NORMAL SPEED)	
S362	1-572-184-11	SWITCH, KEYBOARD (HIGH SPEED)	
S363	1-572-184-11	SWITCH, KEYBOARD (□)	
S364	1-572-184-11	SWITCH, KEYBOARD (▷)	
S365	1-572-184-11	SWITCH, KEYBOARD (▷)	
S366	1-572-184-11	SWITCH, KEYBOARD (REC ●)	
S368	1-572-184-11	SWITCH, KEYBOARD (DIRECTION)	
		< CERAMIC >	
X351	1-577-359-21	VIBRATOR, CERAMIC	

****

MISCELLANEOUS

****

6	1-590-904-11	WIRE, FLAT TYPE (12 CORE)
22	1-590-579-11	CORD (WITH CONNECTOR)
23	1-590-902-11	WIRE, FLAT TYPE (9 CORE)
72	1-638-983-11	PC BOARD, MOTOR FLEXIBLE
HP901	A-2003-837-A	BASE ASSY, HEAD (DECK A)
HRPE901	A-2003-838-A	BASE ASSY, HEAD (DECK B)
M901A	X-3359-417-1	MOTOR ASSY, CAPSTAN
M901B	X-3359-417-1	MOTOR ASSY, CAPSTAN
M902A	X-3363-501-1	MOTOR ASSY, REEL
M902B	X-3363-501-1	MOTOR ASSY, REEL

****

ACCESSORY & PACKING MATERIAL

****

*	4-943-847-01	CUSHION, UPPER (EXECPT E)
*	4-943-848-01	CUSHION, LOWER (EXCEPT E)

****

HARDWARE LIST

****

# 1	7-621-773-93	SCREW (PANEL 2.6 TP2)
# 2	7-621-255-15	SCREW +PTT 2X3 (S)
# 3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
# 4	7-685-870-01	SCREW +BVTT 3X5
# 5	7-682-547-04	SCREW +BVTT 3X6 (S)
# 6	7-621-775-00	SCREW +B 2.6X3
# 7	7-627-556-08	SCREW +P 2.6X2.8

9-956-342-11

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Audio Group

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Published by Customer Relations and Service Group

HCD-H1600

SERVICE MANUAL

AEP Model
UK Model

SONY
MINI HI-FI COMPONENT SYSTEM MHC-1600
SYSTEM POWER
VOLUME
HEADPHONES

This set is the tuner, deck, CDP and amplifier section in MHC-1600.

Model Name Using Similar Mechanism	CDP-H3600
CD Mechanism Name	CDM13BD4A
Base Unit Name	BU-5BD4A

SPECIFICATIONS

Tuner Section

System	FM stereo, FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 — 108 MHz
Antenna terminals	75 ohms unbalanced
Intermediate frequency	10.7 MHz
AM tuner section	
Tuning range	For Europe and U.K. (except Italy) MW: 531 — 1,602 kHz LW: 153 — 279 kHz For Italy MW: 522 — 1,611 kHz LW: 144 — 288 kHz
Antenna	AM loop antenna External antenna terminals
Intermediate frequency	450 kHz

Amplifier Section

Continuous RMS power output	30 + 30 watts (6 ohms at 1 kHz, 5% THD) 25 + 25 watts (6 ohms, DIN, 1 kHz)
Music power output (for the Europe and U.K. model)	45 watts
Peak music power output (for the models other than Europe and U.K.)	280 watts (6 ohms)
Inputs	MIX MIC (minijack): sensitivity 1 mV, impedance 600 ohms DAT IN: sensitivity 450 mV, impedance 47 kilohms For Europe and U.K. PHONO (phono jacks): sensitivity 5 mV, impedance 47 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more. SPEAKER: accepts speakers of 6 to 16 ohms

Compact Disc Player Section

System	Compact disc digital audio system
Laser	Semiconductor laser (λ = 780 nm) Emission duration continuous
Laser output	Max. 44.6 μW* * This output is the value measured at distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Signal to noise ratio	More than 90 dB
Dynamic range	More than 90 dB
Harmonic distortion	Less than 0.05% (at 1 kHz)
Channel separation	More than 90 dB
Output level	2 V (at 50 kilohms)
Load impedance	More than 10 kilohms

MICROFILM

MINI HI-FI
COMPONENT SYSTEM

SONY®

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G:Germany

IT:Italian

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

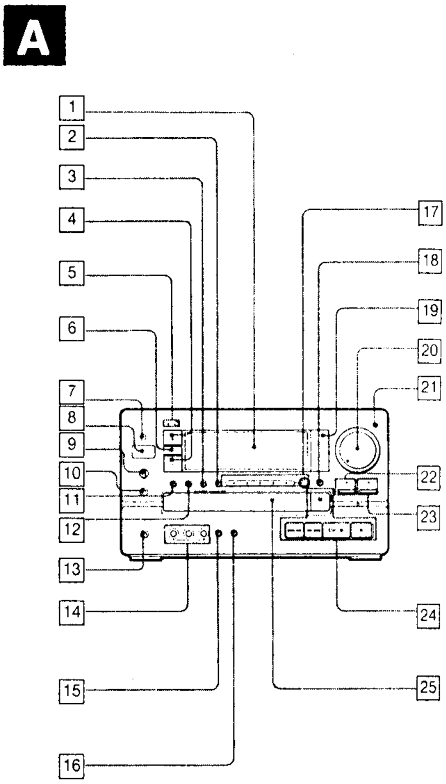
This section is extracted from instruction manual.

Parts Identification

Refer to the pages indicated in ● for use of the buttons.

Tuner/Amplifier/CD player Section A

1 Display window
2 MEMORY/NEXT button ⑳
3 TIMER SET button (106)
4 TUNING PRESET/TIMER +/– buttons ⑳
5 PRESET/TUNING button and PRESET indicator (52)
6 BAND button ㊽
7 Remote control sensor
8 SYSTEM POWER button ㉔
9 MIC (microphone) LEVEL control (118)
10 MIX MIC (mixing microphone) input jack (minijack) (118)
11 CLOCK SET button ⑳
12 TIMER SELECT button (110)
13 HEADPHONES jack (stereo minijack) ㉒
14 PLAY MODE buttons
    CONTINUE button ㉜
    SHUFFLE button ㉜
    PROGRAM button ㊳
15 CHECK button ㊵
16 EDIT/TIME FADE button (82)
17 PRESET button and indicators (62)
18 EQ (equalizer) ON/OFF button (62)
19 FUNCTION button ⑱
20 VOLUME control ㉒
21 WAKE UP button (114)
22 S-SUR (Simulated surround) button and indicator ㉒
23 DBFB (Dynamic Bass Feedback) button and indicator ㉒
24 CD operation buttons
    ⏏ : OPEN/CLOSE ㉔
    ■ : Stop ㉔
    ▷II : Play/pause ㉔
    I◁◁ ◀◀ ▶▶ ▷▷I : Manual search (when kept depressed)/Automatic Music Sensor (when pressed) ㉖
25 Disc tray ㉔



Parts Identification

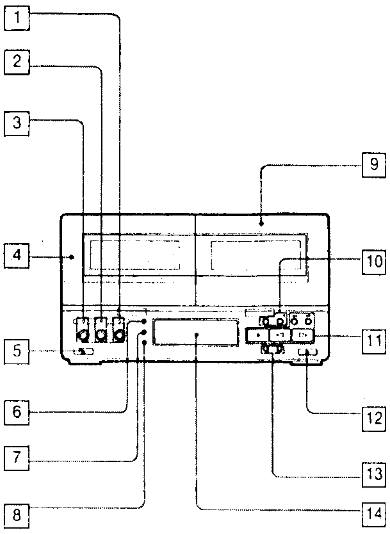
Cassette Deck Section B

1 CD SYNCHRO (CD synchronized recording) button and indicator (88)
2 NORMAL SPEED (normal-speed dubbing) button and indicator (76)
3 HIGH SPEED (high-speed dubbing) button and indicator (76)
4 Cassette holder (Deck A) (54)
5 ⏏ (eject) button (Deck A) (54)
6 RESET button (56)
7 DOLBY NR (Dolby Noise Reduction) button (56)
8 DIRECTION MODE button (54)
9 Cassette holder (Deck B) (70)
10 Tape operation buttons (for Deck B only)
  - ❚❚ : PAUSE (54)
  - ● : REC (recording) (70)

11 Tape operation buttons (for Deck A and B)
  - ◀◀ ▶▶ : Fast winding (56)
  - ■ : Stop (54)
  - ▷ : Forward play (54)
  - ◁ : Reverse play (54)

12 ⏏ (eject) button (Deck B) (70)
13 DECK A/B selection button (54)
14 Display window

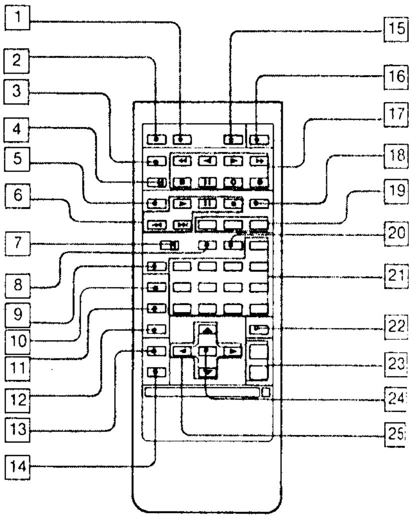
B



Remote Commander C

1 TIMER SELECT button (110)
2 CLOCK DISPLAY button ⑳
3 Cassette deck select button
4 DECK A/B selector (54)
5 CD player select button
6 CD player operation buttons ㉔
7 TUNER/EQ/CD selector ㉞
8 CHECK (CD player) ㊵
  BAND (tuner) button ㊽
9 Tuner select button
10 PHONO select button ⑱
11 DAT select button ⑱
12 VIDEO select button ⑱
13 S-SUR button ㉒
14 DBFB button ㉒
15 SLEEP timer button (116)
16 SYSTEM POWER button ㉔
17 Tape operation buttons (54) (72)
18 TIME button ㉘
19 PLAY MODE buttons ㉚
20 CLEAR button ㊱
21 TUNER/EQ/CD numeric buttons ㉞
22 MEMORY button (66)
23 VOLUME +/– control buttons ㉒
24 EQ ON/OFF button (62)
25 CURSOR CONTROL buttons (64)

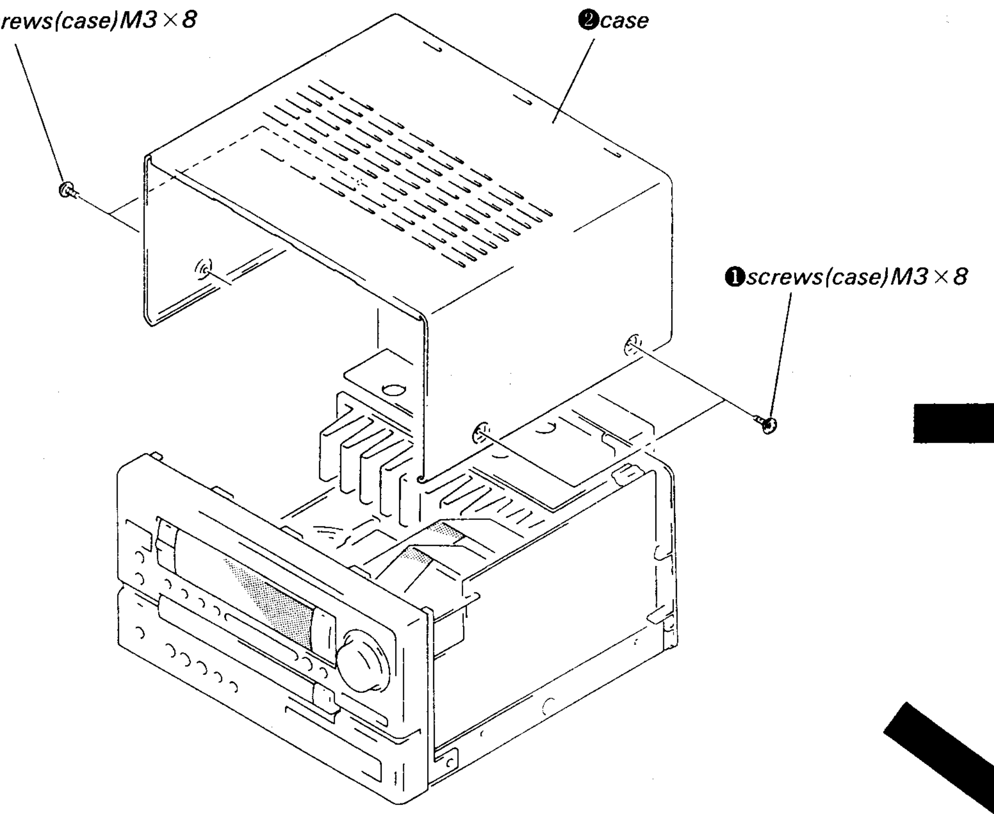
C



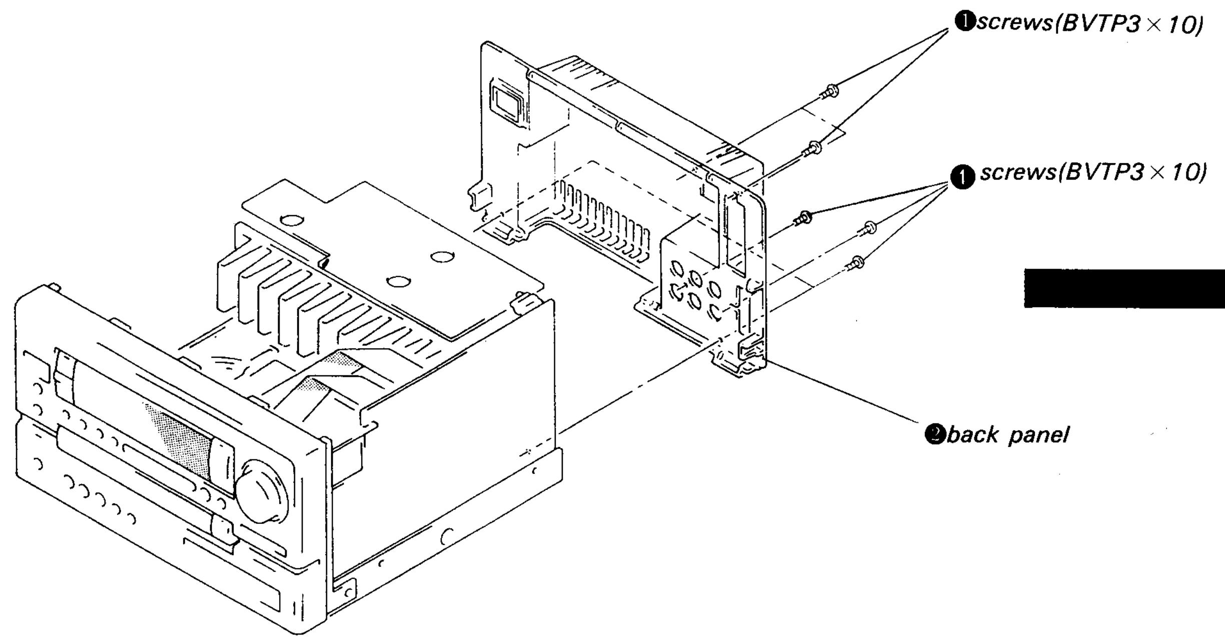
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

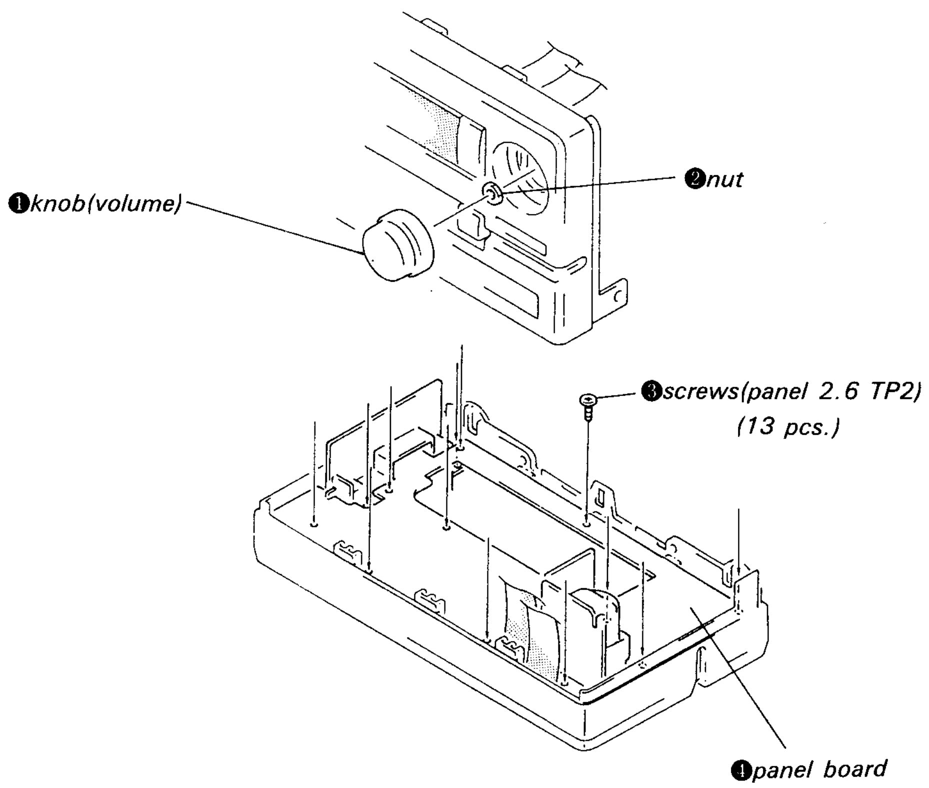
CASE


❶screws(case)M3 × 8
❷case
❶screws(case)M3 × 8

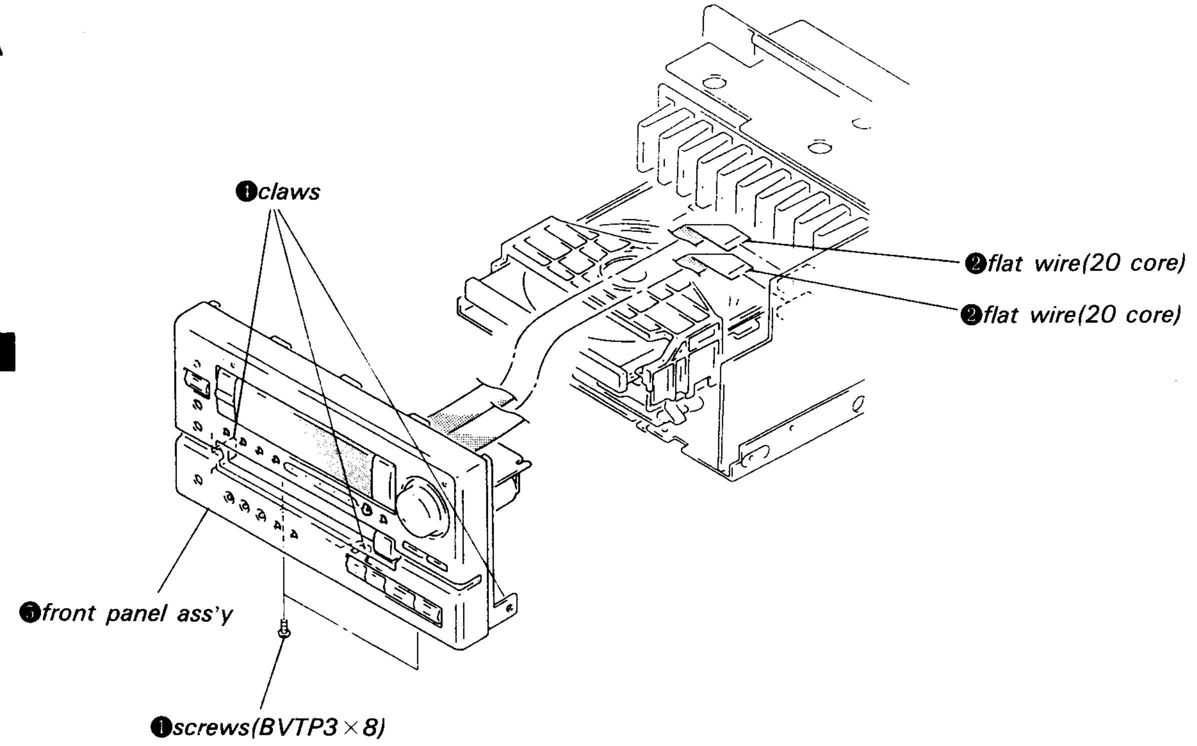
BACK PANEL


❶screws(BVTP3 × 10)
❶ screws(BVTP3 × 10)
❷back panel
❺R
sh

PANEL BOARD

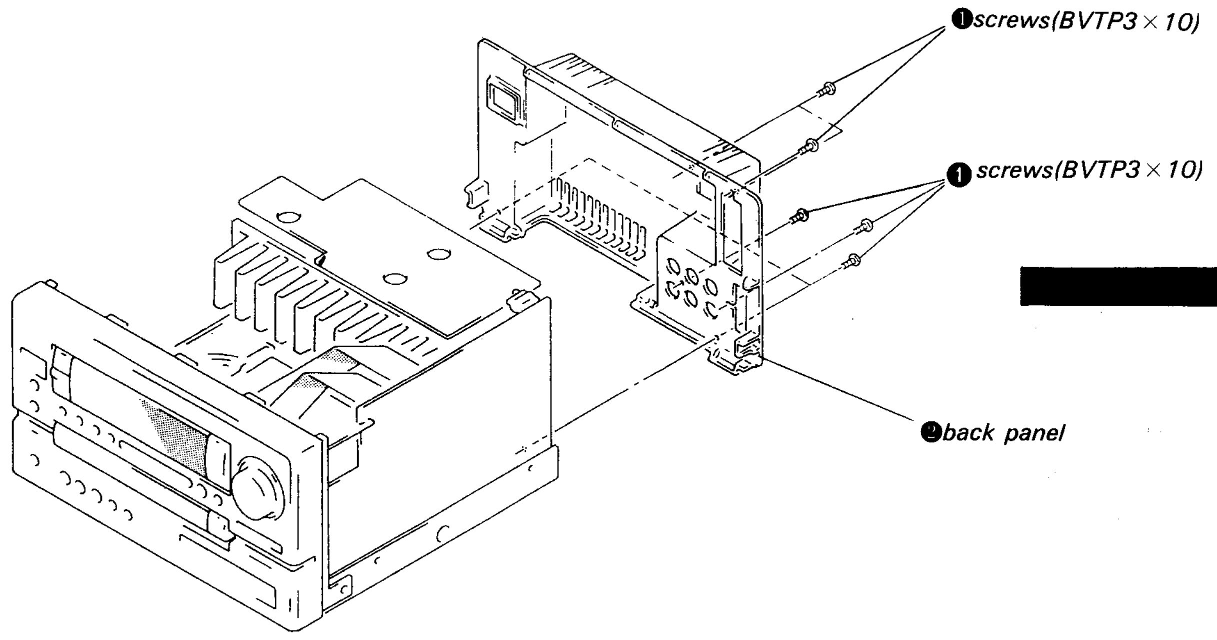

❶knob(volume)
❷nut
❸screws(panel 2.6 TP2)
(13 pcs.)
❹panel board

FRONT PANEL

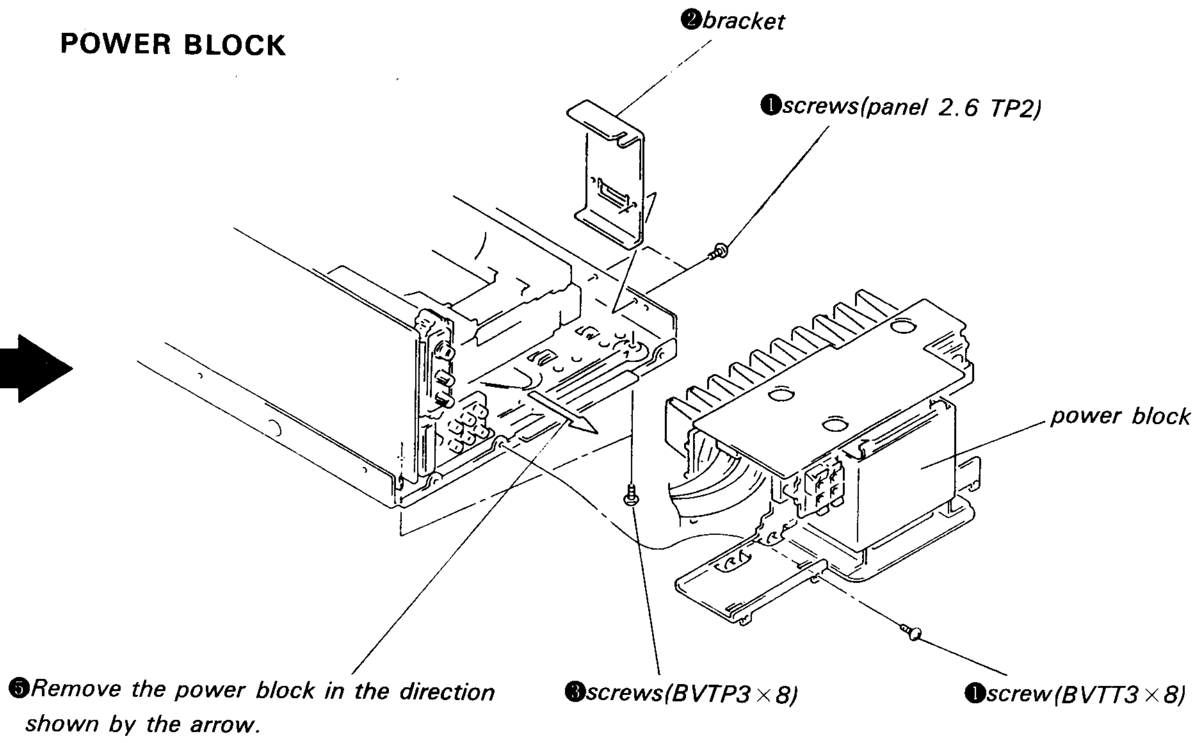

❶claws
❷flat wire(20 core)
❷flat wire(20 core)
❺front panel ass'y
❶screws(BVTP3 × 8)

ase)M3×8

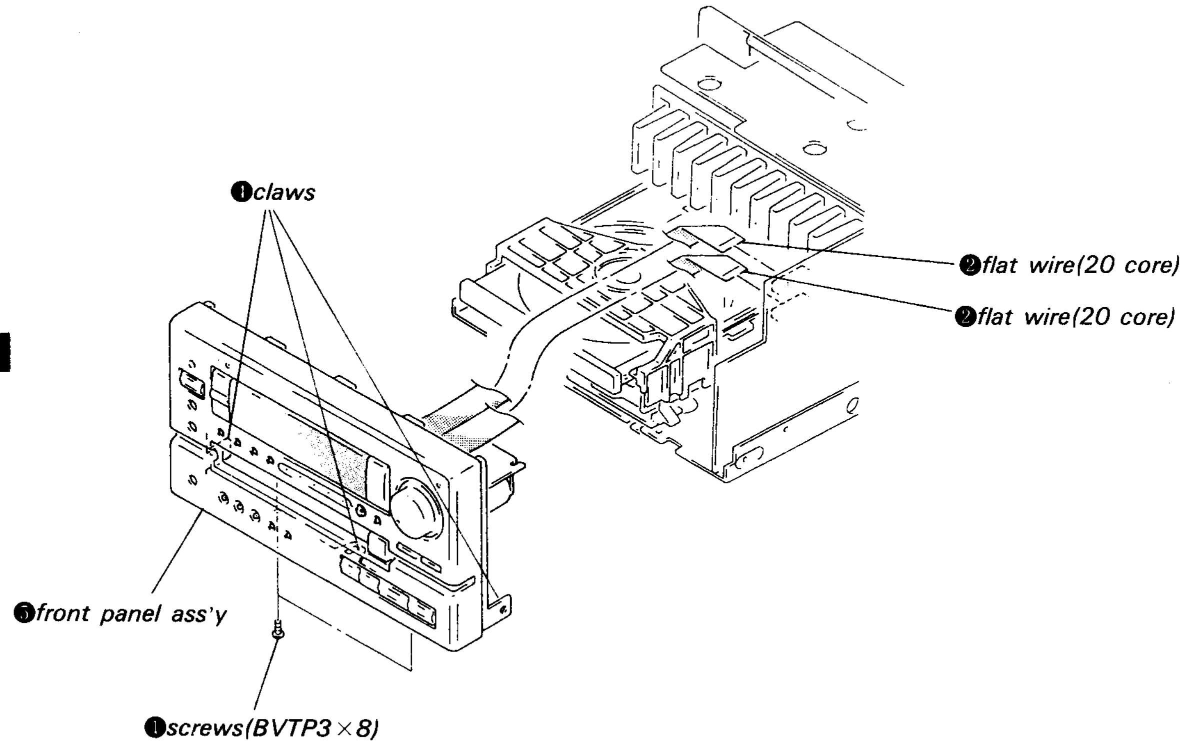
BACK PANEL


❶screws(BVTP3×10)
❶screws(BVTP3×10)
❷back panel

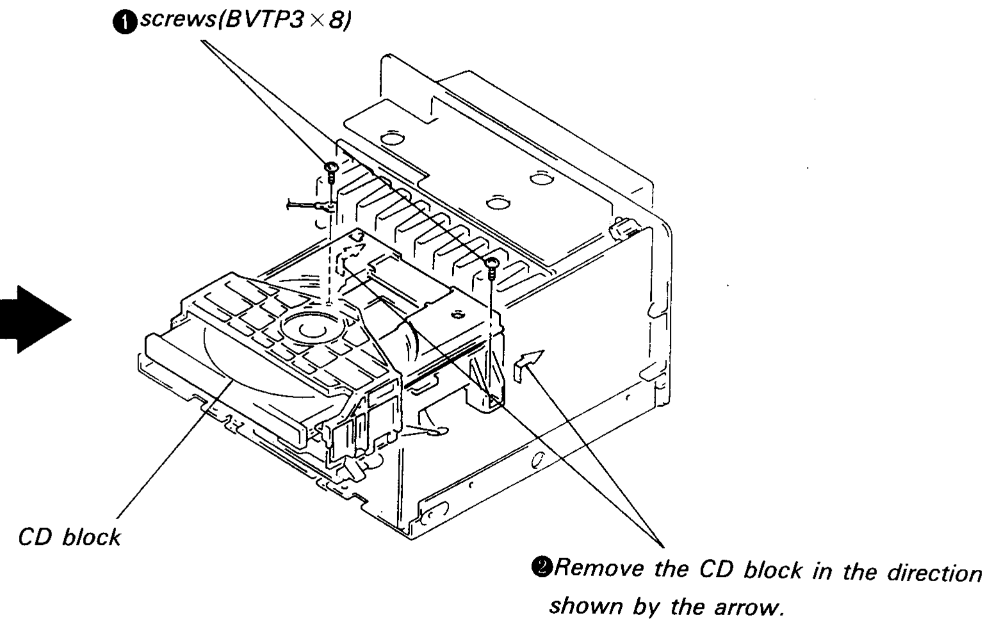
POWER BLOCK


❷bracket
❶screws(panel 2.6 TP2)
power block
❺Remove the power block in the direction shown by the arrow.
❸screws(BVTP3×8)
❶screw(BVTT3×8)

FRONT PANEL


❶claws
❷flat wire(20 core)
❷flat wire(20 core)
❺front panel ass'y
❶screws(BVTP3×8)

CD BLOCK


❶screws(BVTP3×8)
CD block
❷Remove the CD block in the direction shown by the arrow.

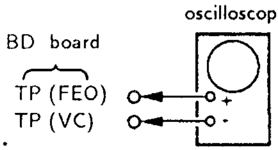
SECTION 3
ADJUSTMENTS
ELECTRICAL ADJUSTMENTS

CD SECTION

Note :

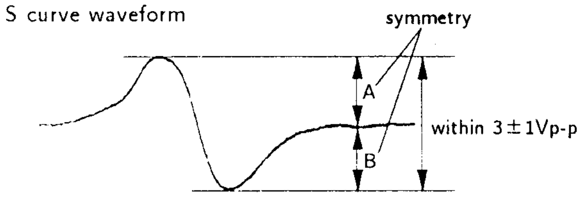
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check


oscilloscope
BD board
TP (FEO)
TP (VC)
+
-

Procedure :

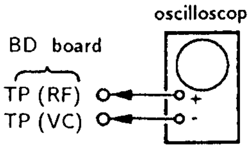
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.


S curve waveform
symmetry
A
B
within 3±1Vp-p

5. After check, remove the lead wire connected in step 2.

Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

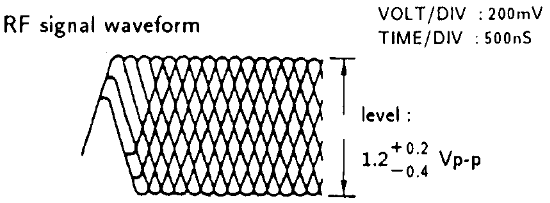

oscilloscope
BD board
TP (RF)
TP (VC)
+
-

Procedure :

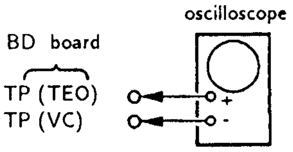
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

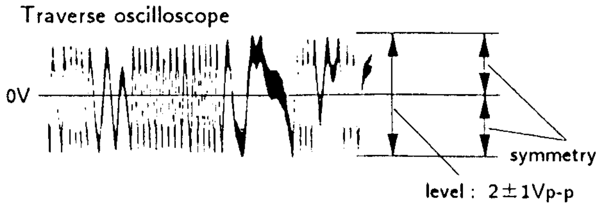

RF signal waveform
VOLT/DIV : 200mV
TIME/DIV : 500nS
level :
$1.2^{+0.2}_{-0.4}$ Vp-p

E-F Balance Check


oscilloscope
BD board
TP (TEO)
TP (VC)
+
-

Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

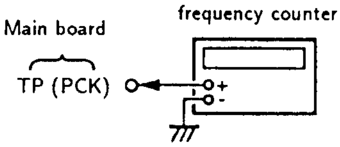

Traverse oscilloscope
0V
symmetry
level : 2±1Vp-p

6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PCK) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4. 3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off. There is no problem.

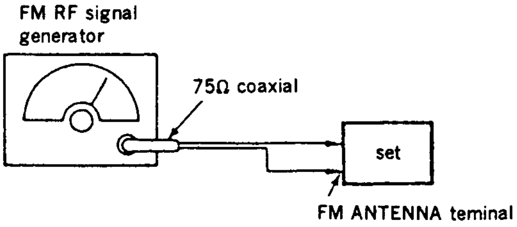
Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

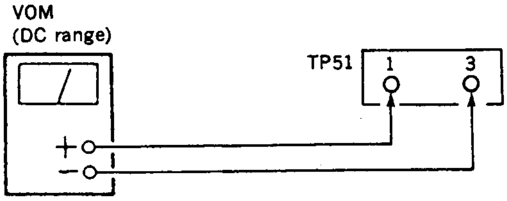
TUNER SECTION

FM SECTION ADJUSTMENTS

Setting :



Carrier frequency : 98MHz
Modulation : 1kHz, 40kHz deviation (AEP, UK, G, IT)



FM Discriminator Alignment (NULL Check)

Band : FM

Procedure :

1. Supply a 1mV (60dBμ) 98MHz signal from the ANTENNA terminal.
2. Tune the to 98MHz.
3. Adjust IFT51 for 0V reading on the VOM

Note : FM tuned indication lighting level adjustment should be made after FM discriminator alignment.

FM Tuned Indication Lighting Level Adjustment

Band : FM

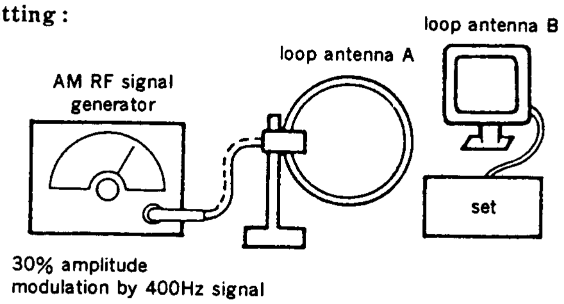
Procedure :

1. Supply a 22.5μV(27dBμ)(AEP,UK)or 12.5μV(22dBμ)(G,IT) 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV52 so that the TUNED light up.

Adjustment Location: TCB011 board

AM SECTION ADJUSTMENTS

Setting :


loop antenna B
loop antenna A
AM RF signal generator
set
30% amplitude modulation by 400Hz signal

MW (AM) Tuned Indication Lighting Level Adjustment

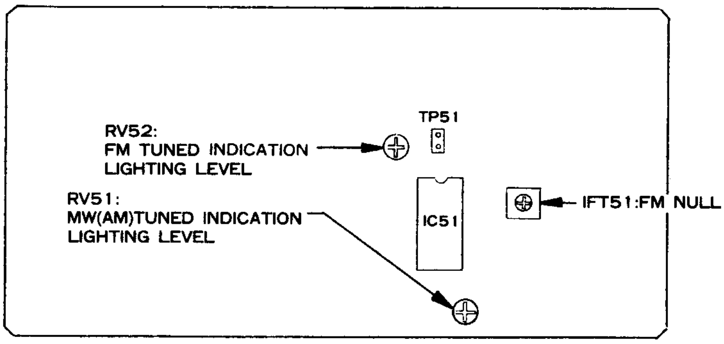
Band : MW or AM

Procedure :

1. Set loop antenna A so that the loop antenna B input level becomes 0.25mV (48dBμ).
2. Tune the set to 1,404kHz .
3. Adjust the RV51 so that the TUNED light up.

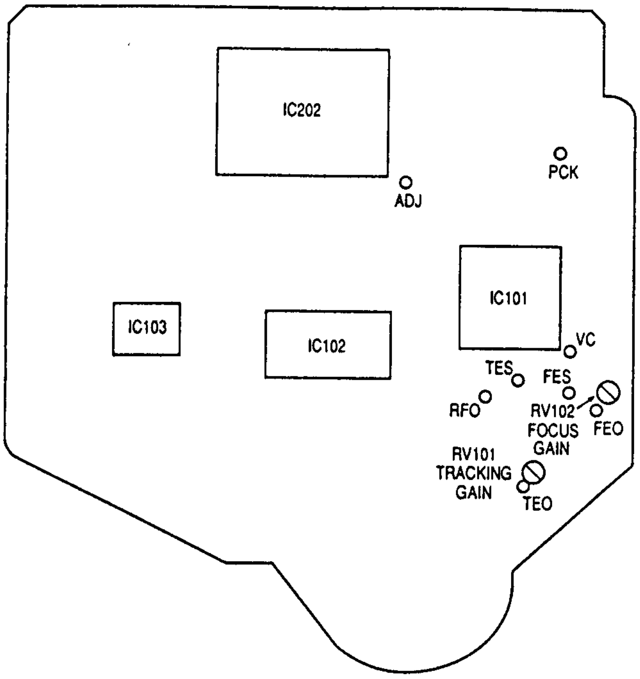
Adjustment Location:

TCB011 BOARD(COMPONENT SIDE)


TP51
RV52:
FM TUNED INDICATION
LIGHTING LEVEL
RV51:
MW(AM)TUNED INDICATION
LIGHTING LEVEL
IC51
IFT51:FM NULL

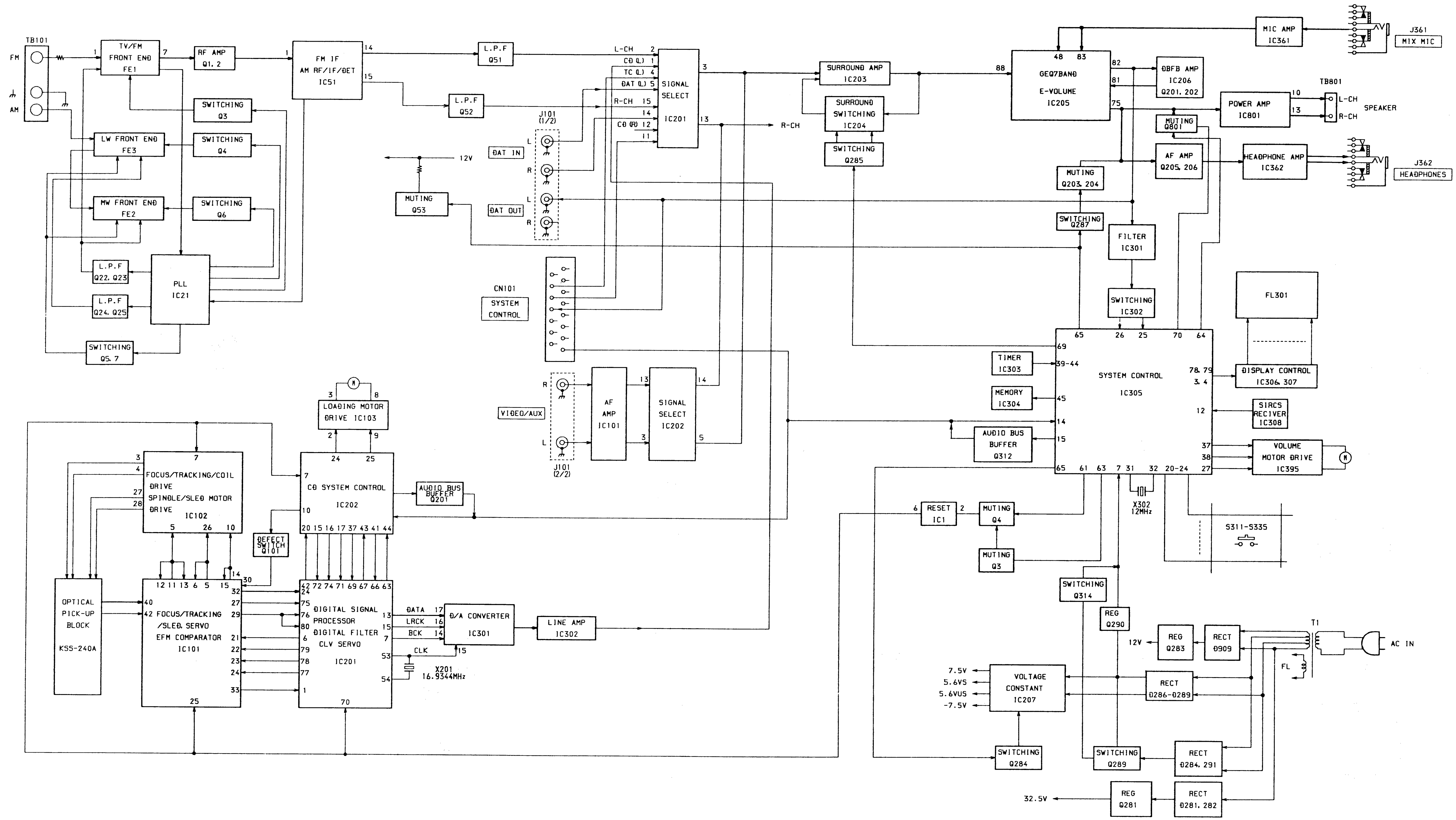
Adjustment Location:

BD BOARD(CONDUCTOR SIDE)

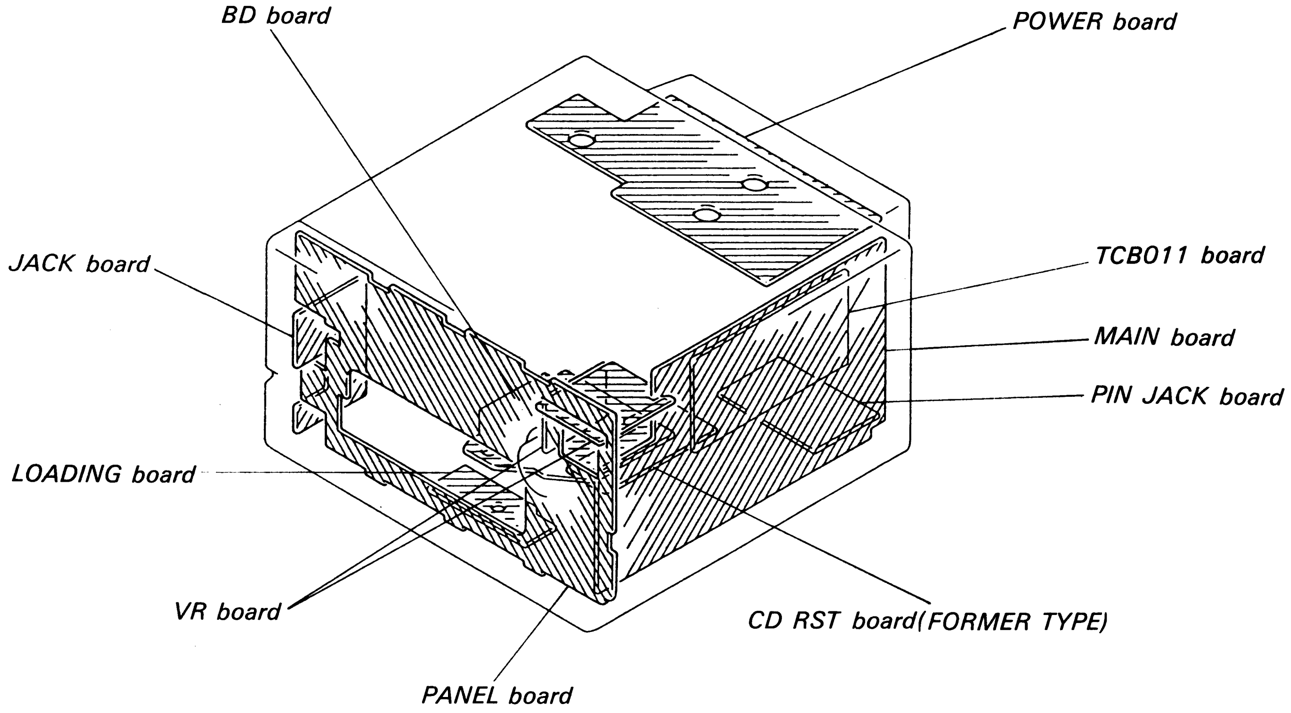

IC202
ADJ
PCK
IC101
IC103
IC102
VC
TES
FES
RFO
RV102
FOCUS
GAIN
FEO
RV101
TRACKING
GAIN
TEO

SECTION 4
DIAGRAMS

4-1. BLOCKDIAGRAM

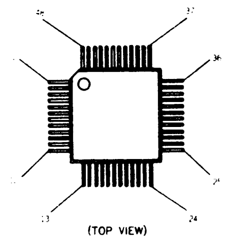

TB101
FM
AM
TV/FM FRONT END FE1
RF AMP Q1, 2
FM IF AM RF/IF/DET IC51
SWITCHING Q3
LW FRONT END FE3
SWITCHING Q4
MW FRONT END FE2
SWITCHING Q6
L.P.F Q22, Q23
L.P.F Q24, Q25
PLL IC21
SWITCHING Q5, 7
L.P.F Q51
L.P.F Q52
12V
MUTING Q53
DAT IN
DAT OUT
J101 (1/2)
L-CH
CD (L)
TC (L)
DAT (L)
R-CH
CD (R)
SIGNAL SELECT IC201
R-CH
CN101
SYSTEM CONTROL
VIDEO/AUX
J101 (2/2)
AF AMP IC101
SIGNAL SELECT IC202
SURROUND AMP IC203
SURROUND SWITCHING IC204
SWITCHING Q285
GEQ7BAND E-VOLUME IC205
DBFB AMP IC206 Q201, 202
MUTING Q801
AF AMP Q205, 206
MUTING Q203, 204
SWITCHING Q287
FILTER IC301
SWITCHING IC302
MIC AMP IC361
J361 MIX MIC
POWER AMP IC801
TB801
L-CH
R-CH
SPEAKER
HEADPHONE AMP IC362
J362 HEADPHONES
FL301
DISPLAY CONTROL IC306, 307
SIRCS RECIVER IC308
VOLUME MOTOR DRIVE IC395
TIMER IC303
MEMORY IC304
AUDIO BUS BUFFER Q312
SYSTEM CONTROL IC305
X302 12MHz
S311-S335
RESET IC1
MUTING Q4
MUTING Q3
SWITCHING Q314
REG Q290
REG Q283
RECT D909
12V
T1
AC IN
FL
VOLTAGE CONSTANT IC207
RECT D286-D289
7.5V
5.6VS
5.6VUS
-7.5V
SWITCHING Q284
SWITCHING Q289
RECT D284, 291
REG Q281
RECT D281, 282
32.5V
LOADING MOTOR DRIVE IC103
FOCUS/TRACKING/COIL DRIVE SPINDLE/SLED MOTOR DRIVE IC102
CD SYSTEM CONTROL IC202
AUDIO BUS BUFFER Q201
DEFECT SWITCH Q101
OPTICAL PICK-UP BLOCK KSS-240A
FOCUS/TRACKING /SLED SERVO EFM COMPARATOR IC101
DIGITAL SIGNAL PROCESSOR DIGITAL FILTER CLV SERVO IC201
DATA
LRCK
BCK
CLK
D/A CONVERTER IC301
LINE AMP IC302
X201 16.9344MHz

4-2. CIRCUIT BOARDS LOCATION

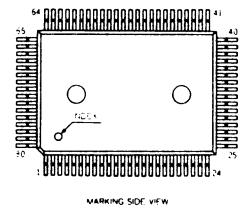

BD board
POWER board
JACK board
TCB011 board
MAIN board
PIN JACK board
LOADING board
VR board
CD RST board(FORMER TYPE)
PANEL board

4-3. SEMICONDUCTOR LEAD LAYOUTS

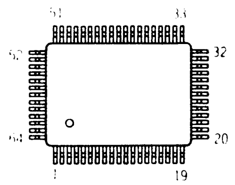
CXA1372Q



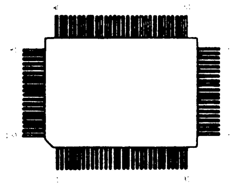
CXD2505Q
µPD78134GF-032-3B9


MARKING SIDE VIEW

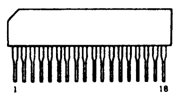
µPD75116GF-760-3BE


32
20
19
1
TOP VIEW

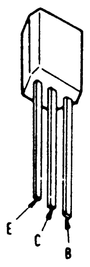
CXA1492Q



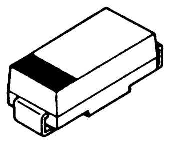
LA5603
STK4132MK2



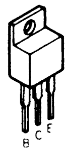
2SA1115-EF
2SC2603-EF



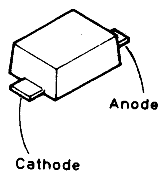
EC10DS2
EC10QS-04



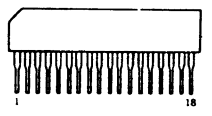
2SD2012



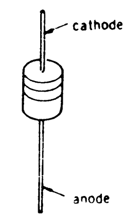
1SS355


Anode
Cathode

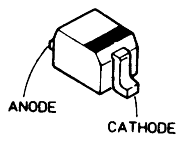
RBA-402



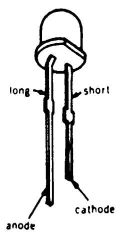
1SS120


cathode
anode

DTZ12B
DTZ3.9B
DTZ33B
DTZ4.7C
DTZ5.6B
DTZ6.2B


ANODE
CATHODE

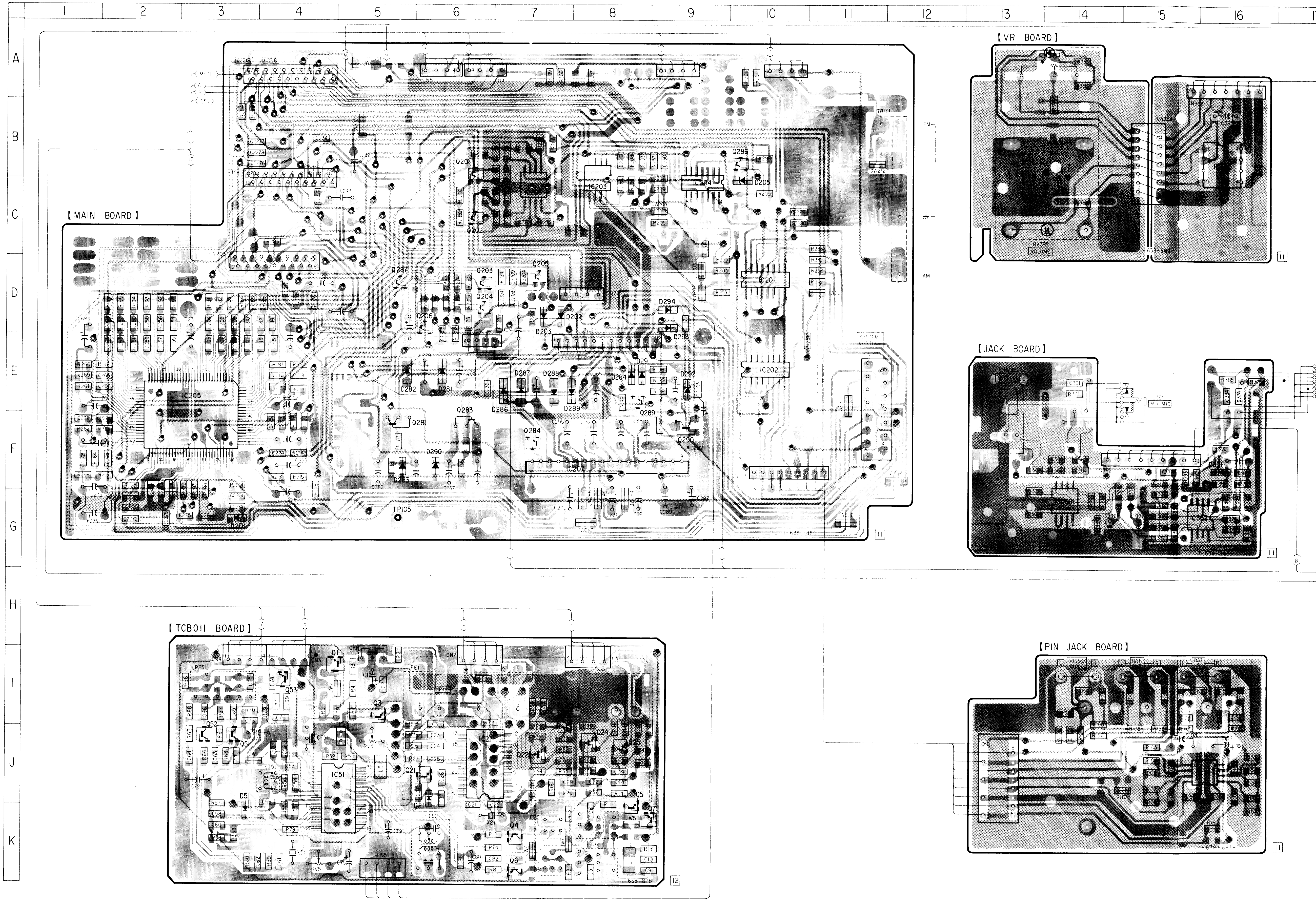
SEL2210S


long
short
anode
cathode

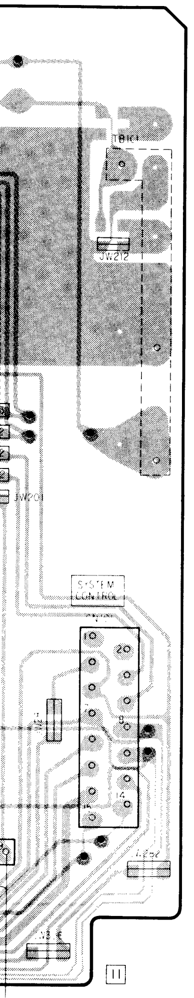
4-4. PRINTED WIRING BOARDS —— Audio Section(FORMER TYPE) ——

• Semiconductor Location(FORMER TYPE)

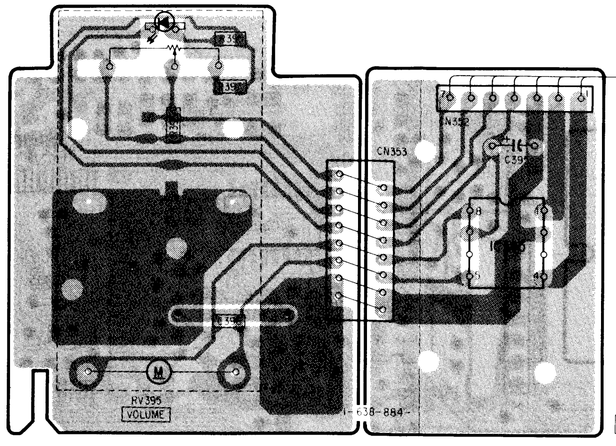
Ref. No.	Location	Ref. No.	Location
D1	H-29	IC207	F-7
D2	H-29	IC301	F-19
D3	K-29	IC302	F-20
D21	J-6	IC303	B-22
D51	K-3	IC304	C-21
D201	G-3	IC305	C-23
D202	D-7	IC306	B-27
D203	D-7	IC307	B-25
D205	C-10	IC308	B-29
D281	E-6	IC309	C-25
D282	E-5	IC361	G-14
D283	F-5	IC362	G-16
D284	E-8	IC395	B-16
D286	E-7	IC801	K-26
D287	E-7		
D288	E-7	Q1 (TCB011)	I-5
D289	E-7	Q1 (CD RST)	H-30
D290	F-6	Q2 (TCB011)	I-4
D291	E-8	Q2 (CD RST)	H-29
D292	E-9	Q3	I-5
D293	D-9	Q4	K-7
D294	D-9	Q5	J-8
D301	E-19	Q6	K-7
D302	F-19	Q7	K-9
D311	C-24	Q21	I-6
D312	D-19	Q22	J-7
D313	F-29	Q23	J-7
D314	C-22	Q24	J-8
D316	D-20	Q25	J-8
D317	D-18	Q51	J-3
D318	A-28	Q52	J-3
D319	D-25	Q53	I-4
D320	D-25	Q201	B-6
D321	D-24	Q202	C-6
D322	D-23	Q203	D-6
D323	D-23	Q204	D-6
D324	E-20	Q205	D-7
D325	E-20	Q206	D-6
D326	B-21	Q281	F-5
D327	C-22	Q283	F-6
D328	C-22	Q284	F-7
D329	E-20	Q286	B-10
D330	G-20	Q287	D-5
D331	D-19	Q289	E-8
D391	F-16	Q290	F-9
D801	J-27	Q311	C-26
D909	I-24	Q312	B-24
		Q313	D-20
IC1	J-30	Q314	B-22
IC2	I-29	Q801	J-28
IC21	J-6		
IC51	J-5		
IC101	J-16		
IC201	D-10		
IC202	E-10		
IC203	C-8		
IC204	C-9		
IC205	E-3		
IC206	C-7		


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
【MAIN BOARD】
【VR BOARD】
【JACK BOARD】
【PIN JACK BOARD】
【TCB011 BOARD】
IC201
IC202
IC203
IC204
IC205
IC207
Q201
Q202
Q203
Q204
Q205
Q206
Q281
Q283
Q284
Q286
Q287
Q289
Q290
D202
D203
D205
D281
D282
D283
D284
D286
D287
D288
D289
D290
D291
D292
D293
D294
TP105
RV395
VOLUME
IC362
IC21
IC51
Q3
Q4
Q6
Q21
Q22
Q24
Q51
Q52
Q53
D51
CN2
CN3
CN5
CN351
FM
AM
11
12

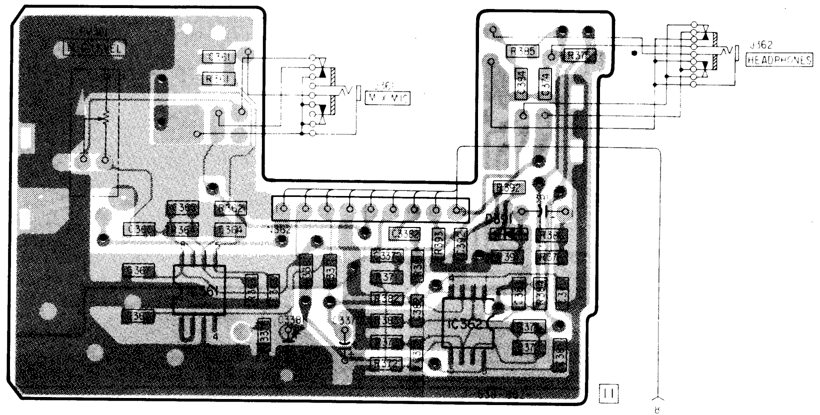
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30


FM
AM
SYSTEM CONTROL

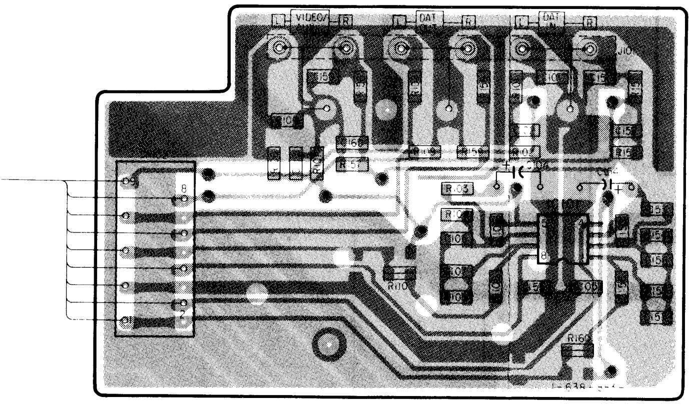
【VR BOARD】


CN353
C391
HV395
VOLUME
1-638-884-
11

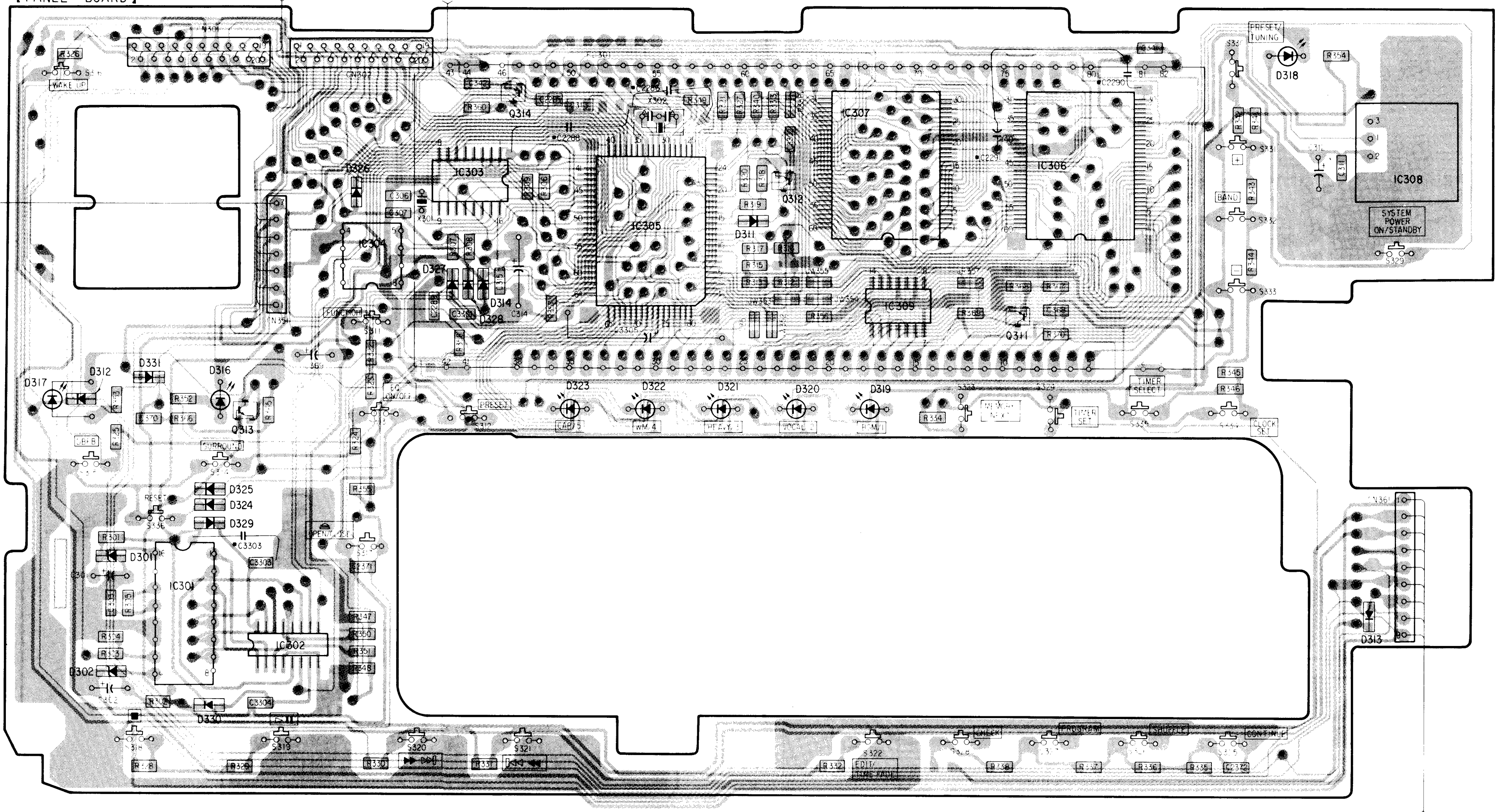
【JACK BOARD】


J162
HEADPHONES
IC362
11

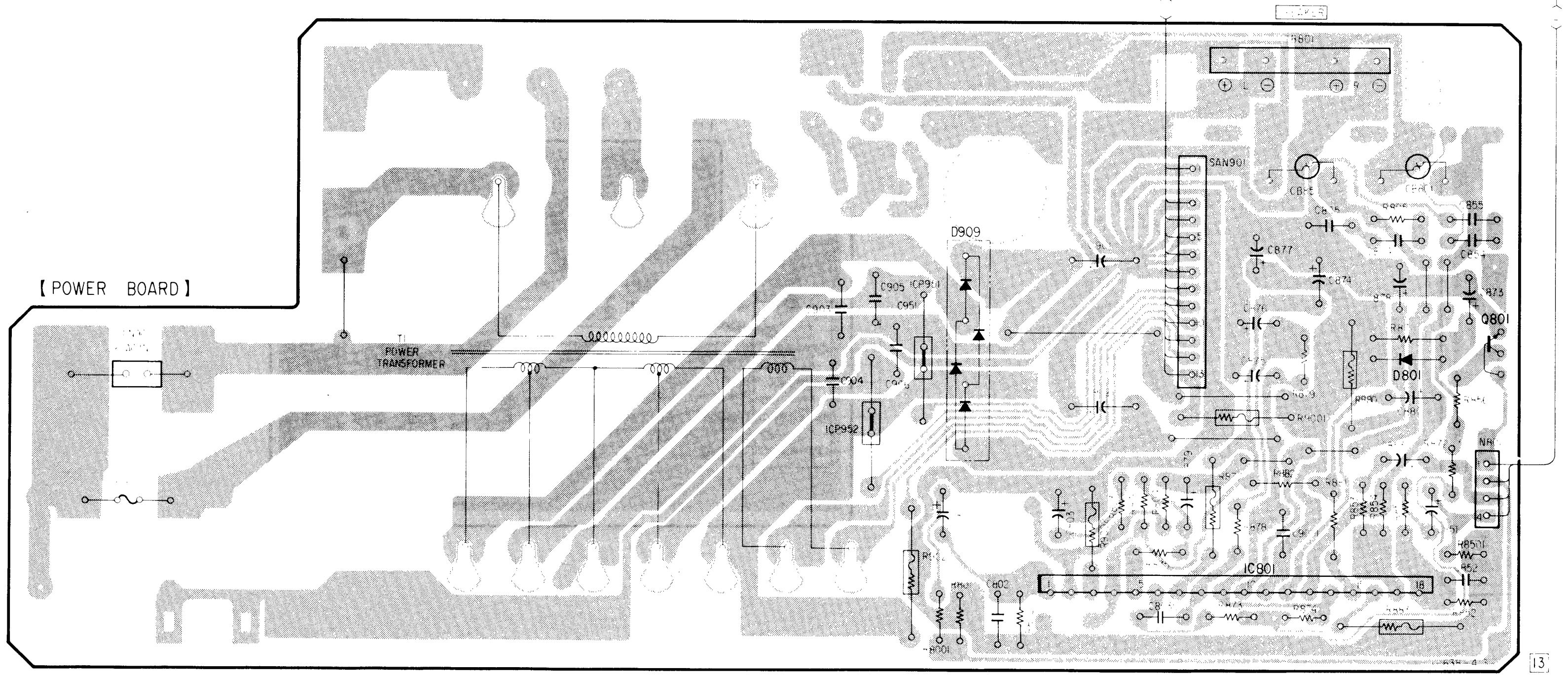
【PIN JACK BOARD】


VIDEO
DAT
R110
R160
11

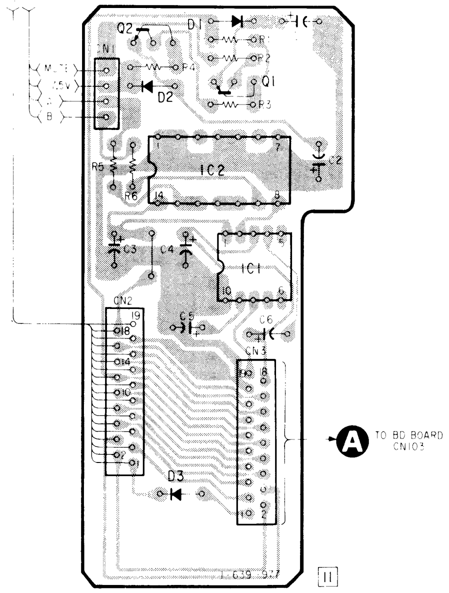
【PANEL BOARD】

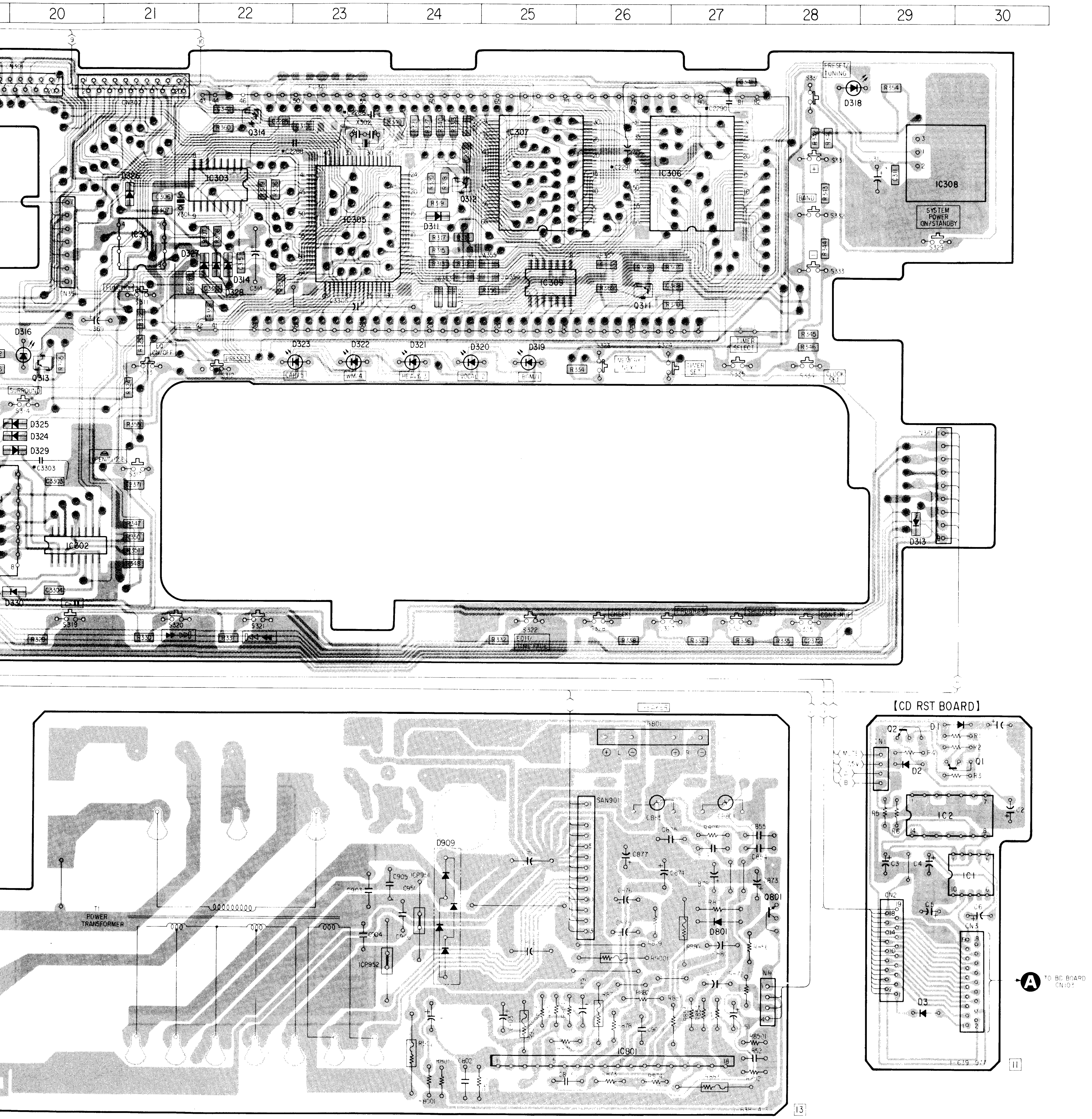

WAKE UP
PRESET/TUNING
D318
IC308
SYSTEM POWER ON/STANDBY
BAND
IC303
IC305
IC307
IC306
IC309
IC304
IC301
IC302
Q314
Q312
Q311
Q313
D311
D312
D314
D316
D317
D319
D320
D321
D322
D323
D324
D325
D326
D327
D328
D329
D330
D331
D301
D302
D313
TIMER SELECT
CLOCK SET
RESET
CONTINUE
EDIT/TIME FADE

【POWER BOARD】


POWER TRANSFORMER
D909
IC901
IC952
D801
Q801
SAN901
13

【CD RST BOARD】


Q2
D1
Q1
D2
D3
IC1
IC2
CN1
CN2
CN3
C3
C4
C2
Ⓐ TO BD BOARD CN103
11


20
21
22
23
24
25
26
27
28
29
30
IC303
IC305
IC307
IC306
IC308
IC309
IC302
IC304
PRESET/TUNING
D318
SYSTEM POWER ON/STANDBY
BAND
D323
D322
D321
D320
D319
D316
D313
D325
D324
D329
D330
TIMER SELECT
CLOCK SET
EDIT/
[CD RST BOARD]
IC2
IC1
Q1
Q2
D1
D2
D3
CN1
CN2
CN3
POWER TRANSFORMER
D909
D801
Q801
IC801
TO BD BOARD
13
11

Note:

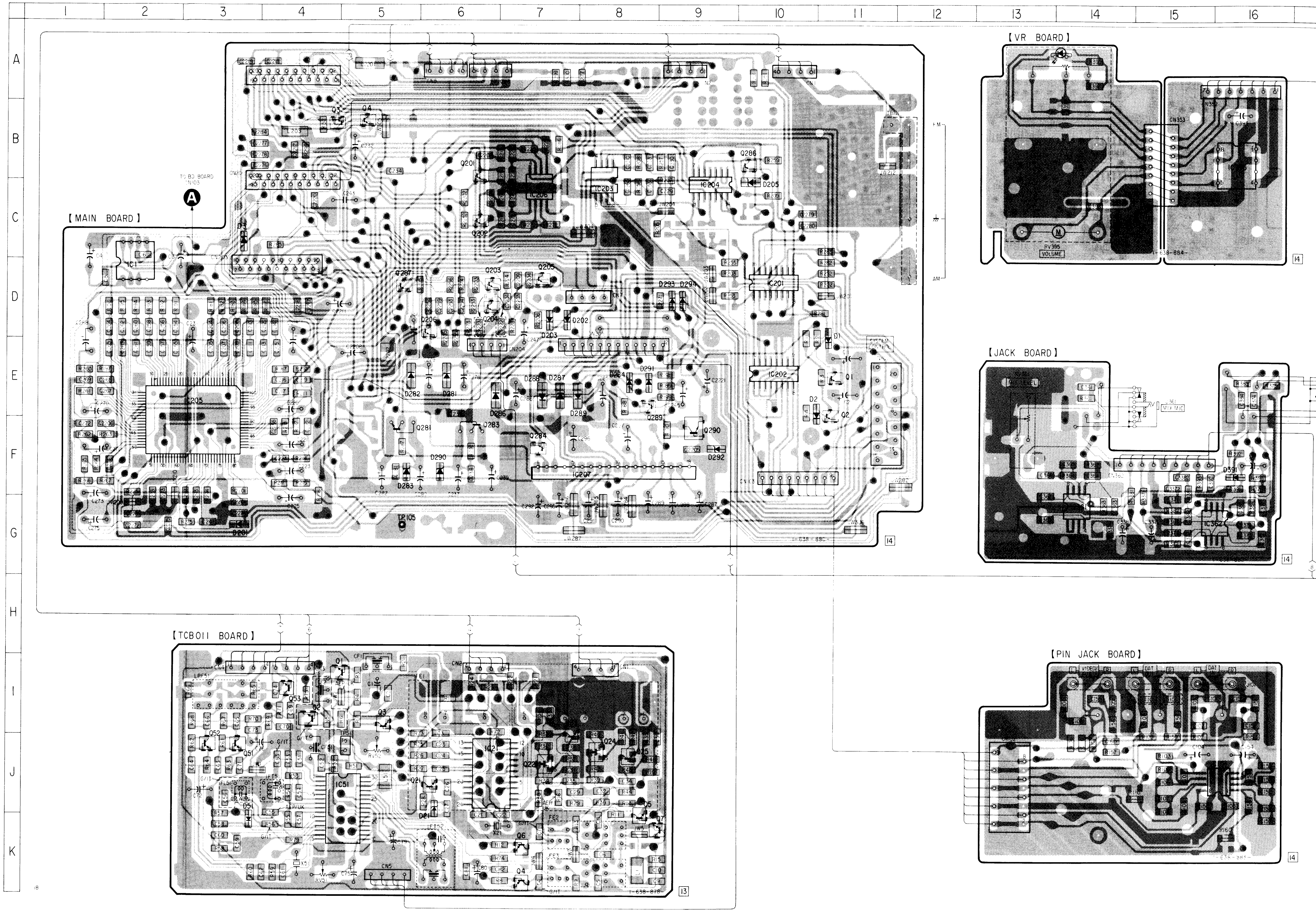
- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

FORMER TYPE : AEP, UK

4-5. PRINTED WIRING BOARDS —— Audio Section (NEW TYPE)

• Semiconductor Location(NEW TYPE)

Ref. No.	Location	Ref. No.	Location
D1	D-11	IC301	F-19
D2	E-11	IC302	F-20
D3	C-3	IC303	B-22
D21	J-6	IC304	C-21
D51	K-3	IC305	C-23
D201	G-3	IC306	B-27
D202	D-7	IC307	B-25
D203	D-7	IC308	B-29
D205	C-10	IC309	C-25
D281	E-6	IC361	G-14
D282	E-5	IC362	G-16
D283	F-5	IC395	B-16
D284	E-8	IC801	K-26
D286	E-6		
D287	E-7	Q1 (TCB011)	I-5
D288	E-7	Q1 (MAIN)	E-11
D289	E-7	Q2 (TCB011)	I-4
D290	F-6	Q2 (MAIN)	E-11
D291	E-8	Q3 (TCB011)	I-5
D292	F-9	Q3 (MAIN)	B-4
D293	D-9	Q4 (TCB011)	K-7
D294	D-9	Q4 (MAIN)	B-5
D301	E-19	Q5	J-8
D302	F-19	Q6	K-7
D311	C-24	Q7	K-9
D312	D-19	Q21	J-6
D313	F-29	Q22	J-7
D314	C-22	Q23	J-7
D316	D-20	Q24	J-8
D317	D-18	Q25	J-8
D318	A-28	Q51	J-3
D319	D-25	Q52	J-3
D320	D-25	Q53	I-4
D321	D-24	Q201	B-6
D322	D-23	Q202	C-6
D323	D-23	Q203	D-6
D324	E-20	Q204	D-6
D325	E-20	Q205	D-7
D326	B-21	Q206	D-6
D327	C-21	Q281	F-5
D328	C-22	Q283	E-6
D329	E-20	Q284	F-7
D330	G-20	Q286	B-10
D331	D-19	Q287	D-5
D391	F-16	Q289	E-8
D801	J-27	Q290	F-9
D909	I-24	Q311	C-26
		Q312	B-24
IC1	D-2	Q313	D-20
IC21	J-6	Q314	B-22
IC51	J-5	Q801	J-28
IC101	J-16		
IC201	D-10		
IC202	E-10		
IC203	C-8		
IC204	C-9		
IC205	E-3		
IC206	C-7		
IC207	F-7		


1
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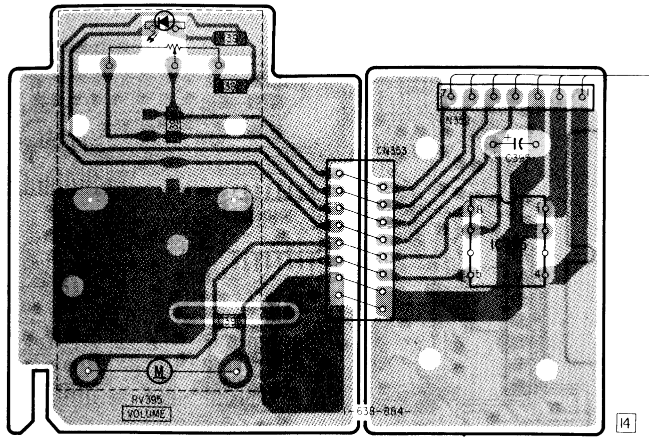
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
TO BD BOARD CN103
A
【MAIN BOARD】
【VR BOARD】
RV395 VOLUME
【JACK BOARD】
【PIN JACK BOARD】
【TCB011 BOARD】
IC1
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC21
IC51
Q201
Q202
Q203
Q204
Q205
Q206
Q281
Q283
Q284
Q286
Q287
Q289
Q290
D205
D281
D282
D283
D286
D287
D288
D289
D290
D291
D292
D293
D294
D201
D202
D203
D391
IC361
IC362
TP105
Q51
Q52
Q53
D51
D21
Q21
Q22
Q24
Q3
Q4
Q5
Q6
CN5
FM
AM
1-638-89C-
1-638-878-
1-638-884-
13
14

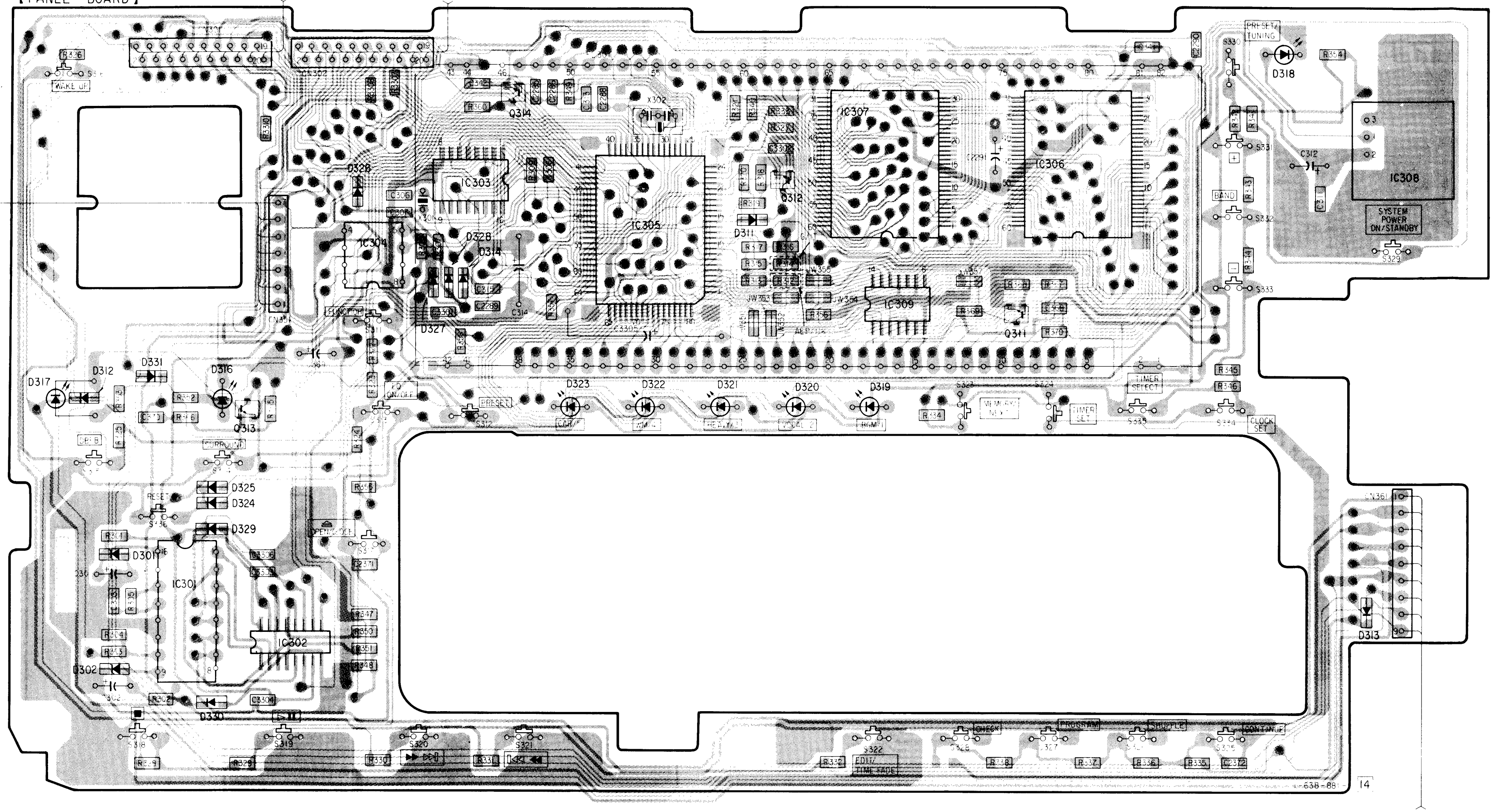
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

【VR BOARD】



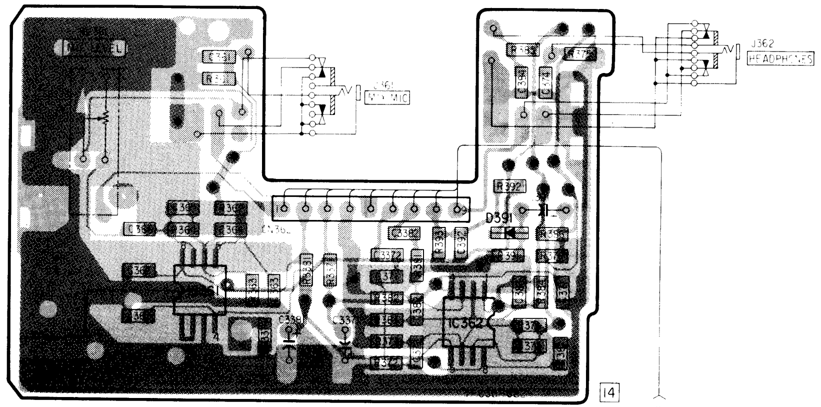
CN353
CN352
IC351
RV395
VOLUME
M
14

【PANEL BOARD】



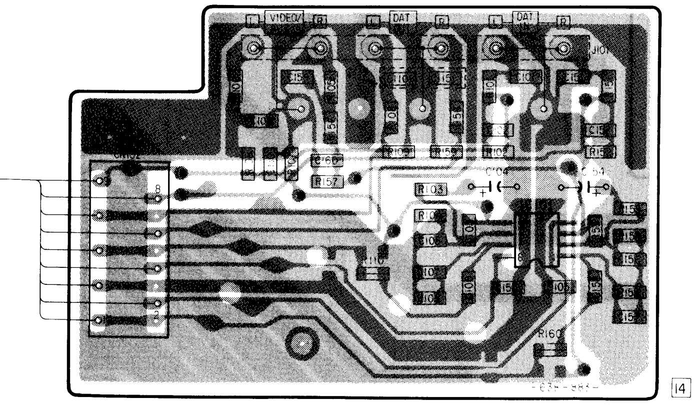
WAKE UP
D318
PRESET/TUNING
IC303
IC304
IC305
IC306
IC307
IC308
IC309
IC301
IC302
D314
D312
D313
D311
D316
D317
D319
D320
D321
D322
D323
D324
D325
D327
D328
D329
D330
D331
D301
D302
Q311
Q312
Q313
Q314
C312
BAND
SYSTEM POWER ON/STANDBY
TIMER SELECT
TIMER SET
CLOCK SET
PRESET
MEMORY
RESET
EDIT/TIME FADE
CN361
14

【JACK BOARD】



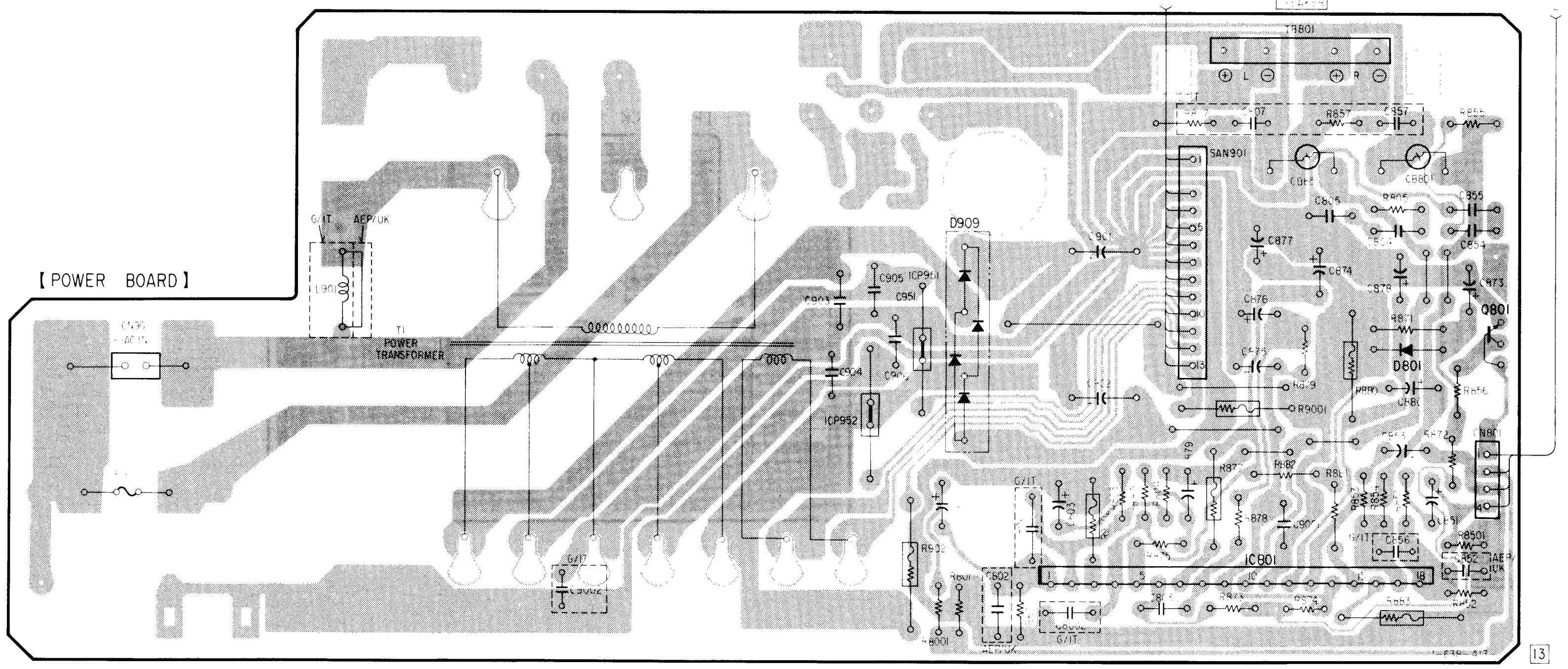
J362
HEADPHONES
D391
IC362
14

【PIN JACK BOARD】



VIDEO
DAT
DAT
R160
14

【POWER BOARD】



TB801
L
R
SAN901
D909
ICP901
ICP952
C905
C904
POWER TRANSFORMER
T1
AEP/UK
G/IT
C877
C874
C876
R861
D801
Q801
R900
R857
IC901
13

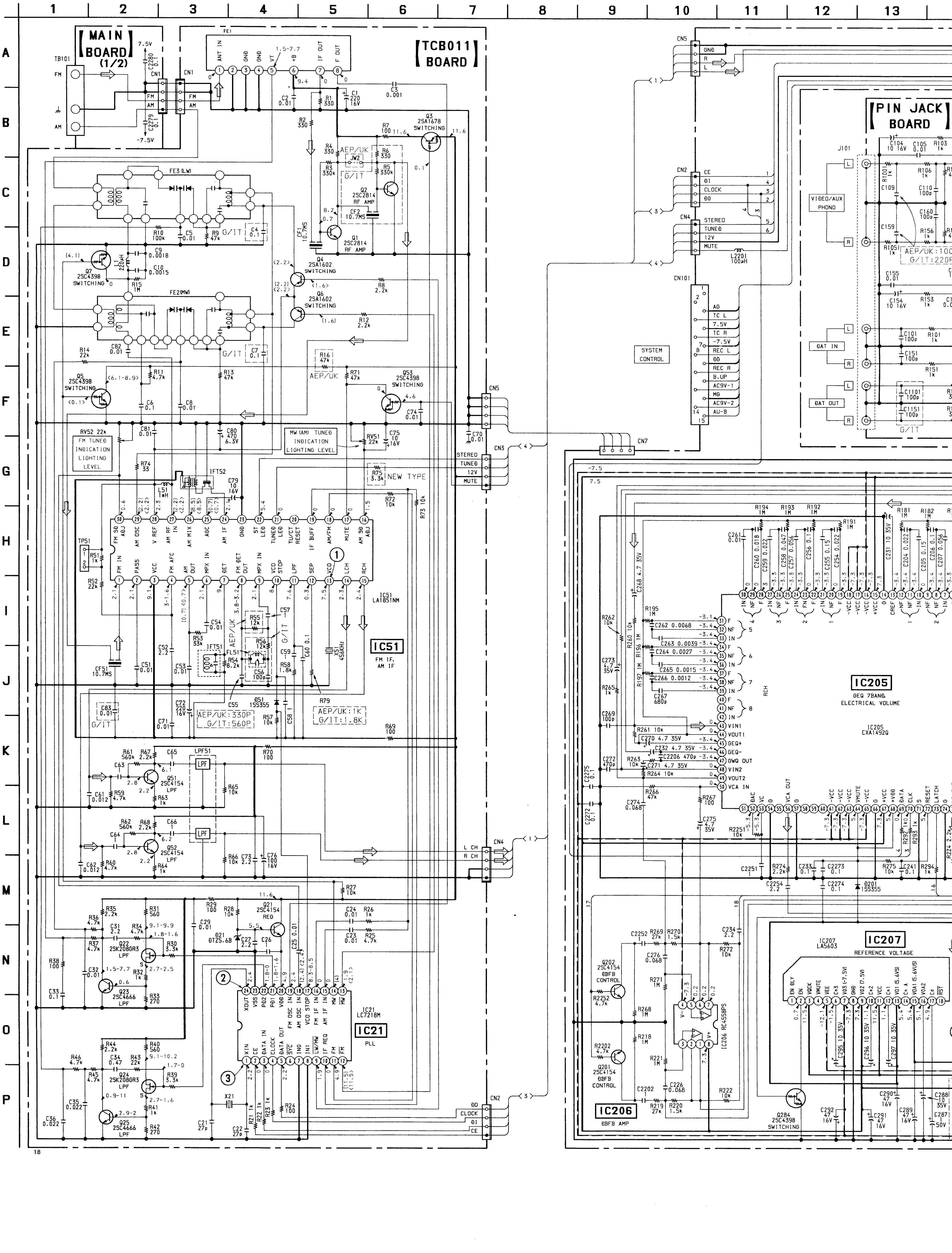
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ⏛ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ━ : B+ Line
- ━ ━ : B– Line
- ☐ : adjustment for repair.

4-6. SCHEMATIC DIAGRAM —— Audio Section——



1
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9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
MAIN BOARD (1/2)
TCB011 BOARD
PIN JACK BOARD
TB101
FM
AM
CN1
FE1
ANT IN
GND
VT
+B
IF OUT
F OUT
FE3 (LW)
FE2 (MW)
Q7 2SC4398 SWITCHING
Q5 2SC4398 SWITCHING
Q3 2SA1678 SWITCHING
Q2 2SC2814 RF AMP
Q1 2SC2814 RF AMP
Q4 2SA1602 SWITCHING
Q6 2SA1602 SWITCHING
Q53 2SC4398 SWITCHING
AEP/UK
G/IT
FM TUNED INDICATION LIGHTING LEVEL
MW (AM) TUNED INDICATION LIGHTING LEVEL
NEW TYPE
IC51 LA1851NM
IC51 FM IF, AM IF
Q51 2SC4154 LPF
Q52 2SC4154 LPF
Q21 2SC4154 REG
Q22 2SK208GR3 LPF
Q23 2SC4666 LPF
Q24 2SK208GR3 LPF
Q25 2SC4666 LPF
IC21 LC7218M
IC21 PLL
X21
CN2
CN3
CN4
CN5
CN7
CN101
STEREO
TUNED
12V
MUTE
L CH
R CH
DO
CLOCK
DI
CE
SYSTEM CONTROL
J101
VIDEO/AUX PHONO
DAT IN
DAT OUT
IC205
GEQ 7BAND, ELECTRICAL VOLUME
IC205 CXA1492Q
IC206 RC4558PS
IC206 GBFB AMP
Q202 2SC4154 GBFB CONTROL
Q201 2SC4154 GBFB CONTROL
IC207 LA5603
IC207 REFERENCE VOLTAGE
Q284 2SC4398 SWITCHING
D201 1SS355

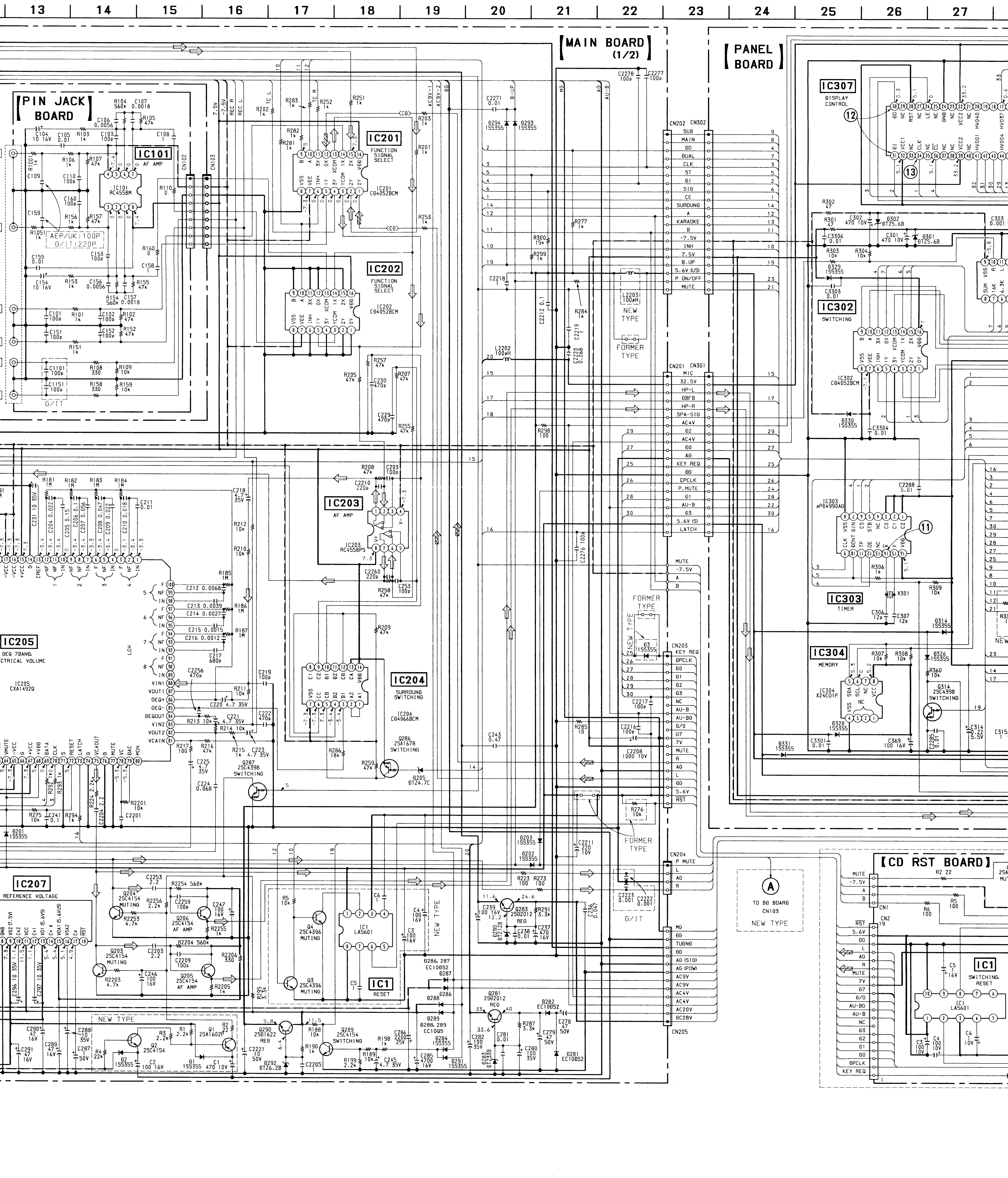
oted. pF: μμF
or electrolytics

less otherwise

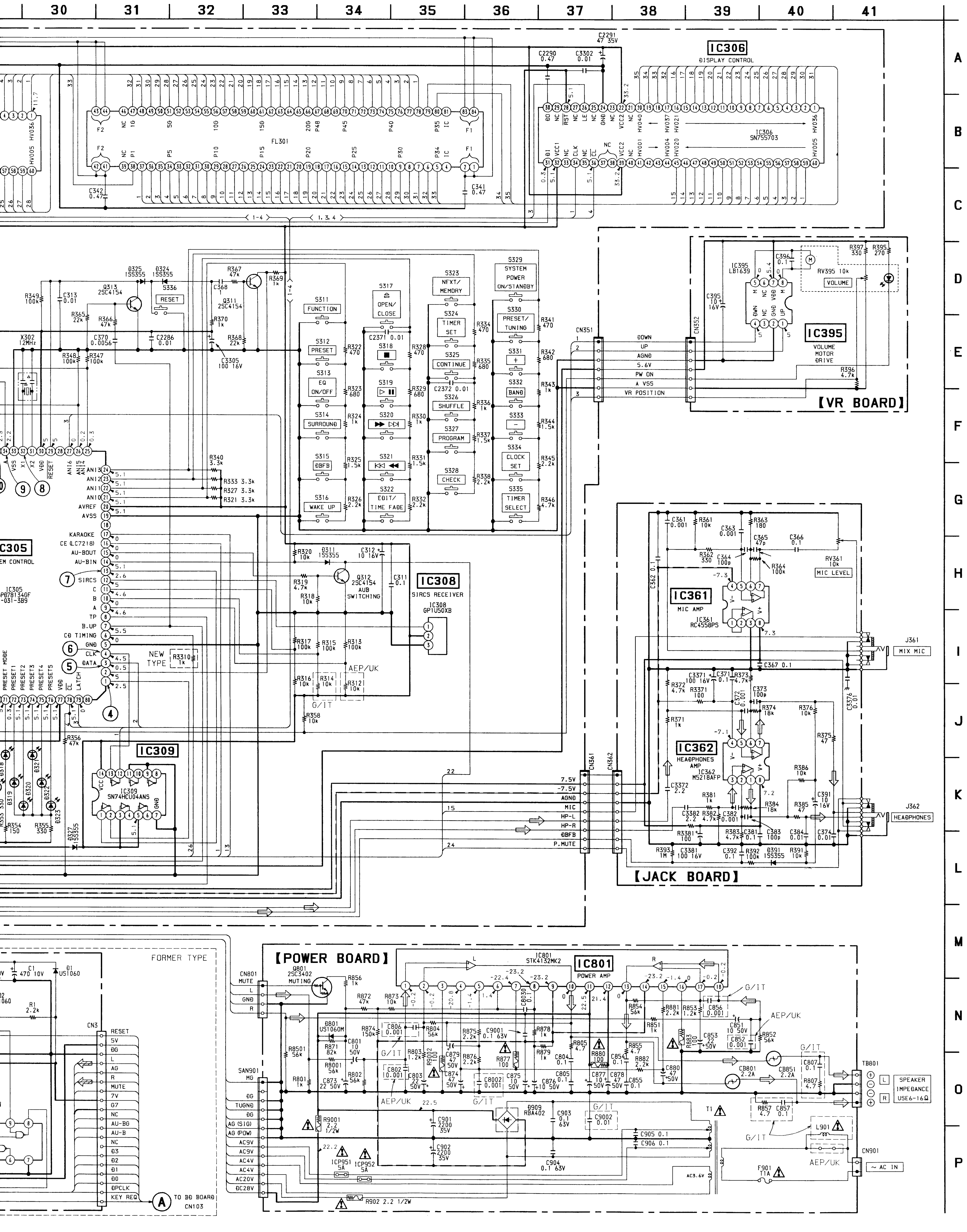
⚠ or dotted
y.
ed.

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  (   ): MW
  <   >: LW
- Voltages are taken with a VOM (Input Impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM ⇨ : CD

NEW TYPE : AEP, G, IT, UK
FORMER TYPE : AEP, UK
G : Germany
IT : Italian

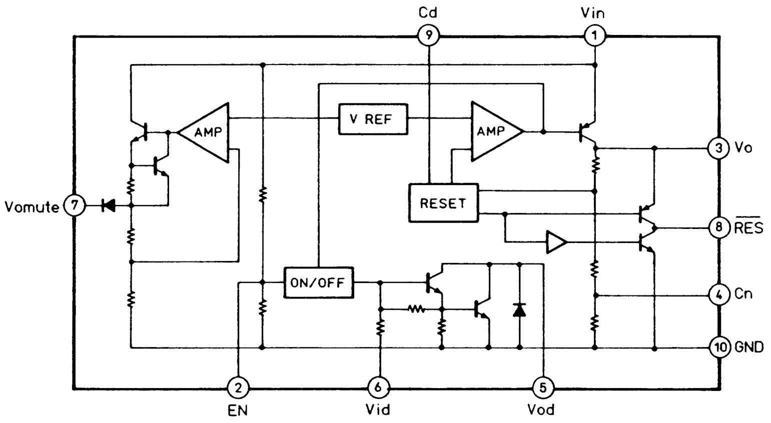


13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
PIN JACK BOARD
IC101 AF AMP
IC101 RC4558M
AEP/UK:100P
G/IT:220P
G/IT
IC201 FUNCTION SIGNAL SELECT
IC201 CD4052BCM
IC202 FUNCTION SIGNAL SELECT
IC202 CD4052BCM
IC203 AF AMP
IC203 RC4558PS
IC204 SURROUND SWITCHING
IC204 CD4066BCM
IC205 GEQ 7BAND, ELECTRICAL VOLUME
IC205 CXA1492Q
IC207 REFERENCE VOLTAGE
IC1 RESET
IC1 LA5601
Q4 2SC4396 MUTING
Q3 2SC4396 MUTING
Q204 2SC4154 MUTING
Q206 2SC4154 AF AMP
Q203 2SC4154 MUTING
Q205 2SC4154 AF AMP
Q286 2SA1678 SWITCHING
Q287 2SC4398 SWITCHING
Q283 2SD2012 REG
Q281 2SD2012 REG
Q290 2SD1622 REG
Q289 2SC4154 SWITCHING
Q1 2SA1602P
Q2 2SC4154
NEW TYPE
MAIN BOARD (1/2)
CN202 CN302
CN201 CN301
CN203
CN204
CN205
NEW TYPE
FORMER TYPE
L2203 100μH
PANEL BOARD
IC307 DISPLAY CONTROL
IC302 SWITCHING
IC302 CD4052BCM
IC303 TIMER
IC303 μPD4990AG
IC304 MEMORY
IC304 X24C01P
Q314 2SC4398 SWITCHING
CD RST BOARD
IC1 SWITCHING, RESET
IC1 LA5601
A
TO BD BOARD CN103
NEW TYPE

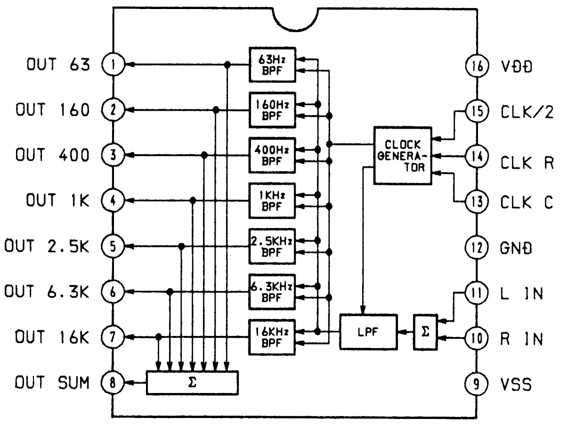

30
31
32
33
34
35
36
37
38
39
40
41
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
IC306
DISPLAY CONTROL
IC306 SN75S703
FL301
C2290 0.47
C3302 0.01
C2291 47 35V
C342 0.47
C341 0.47
S311 FUNCTION
S312 PRESET
S313 EQ ON/OFF
S314 SURROUND
S315 DBFB
S316 WAKE UP
S317 OPEN/CLOSE
S318 ■
S319 ▷ II
S320 ▶▶ ▷▷I
S321 I◁◁ ◀◀
S322 EDIT/ TIME FADE
S323 NEXT/ MEMORY
S324 TIMER SET
S325 CONTINUE
S326 SHUFFLE
S327 PROGRAM
S328 CHECK
S329 SYSTEM POWER ON/STANDBY
S330 PRESET/ TUNING
S331 +
S332 BAND
S333 −
S334 CLOCK SET
S335 TIMER SELECT
S336 RESET
X302 12MHz
IC305
SYSTEM CONTROL
IC308
SIRCS RECEIVER
IC308 GP1U50XB
Q312 2SC4154 AUB SWITCHING
NEW TYPE
AEP/UK
G/IT
IC309
IC309 SN74HCU04ANS
CN351
CN352
DOWN
UP
AGND
5.6V
PW ON
A VSS
VR POSITION
IC395
IC395 LB1639
VOLUME MOTOR DRIVE
RV395 10k VOLUME
【VR BOARD】
IC361
MIC AMP
IC361 RC4558PS
RV361 10k MIC LEVEL
J361 MIX MIC
IC362
HEADPHONES AMP
IC362 M5218AFP
J362 HEADPHONES
CN361
CN362
7.5V
-7.5V
AGND
MIC
HP-L
HP-R
DBFB
P.MUTE
【JACK BOARD】
FORMER TYPE
CN3
RESET
5V
DG
L
AG
R
MUTE
7V
G7
NC
AU-BG
AU-B
NC
D3
D2
D1
D0
DPCLK
KEY REQ
TO BD BOARD CN103
【POWER BOARD】
IC801
IC801 STK4132MK2
POWER AMP
CN801
MUTE
L
GND
R
Q801 2SC3402 MUTING
SAN901
MG
TUGND
DG
AG (SIG)
AG (POW)
AC9V
AC9V
AC4V
AC4V
AC20V
DC28V
D909 RBA402
C901 2200 35V
C902 2200 35V
T1
TB801
SPEAKER IMPEDANCE USE 6-16Ω
L901
CN901
~ AC IN
F901 T1A
AC3.6V
R902 2.2 1/2W
ICP951 5A
ICP952 5A
R9001 2.2 1/2W

• **IC Block Diagrams**

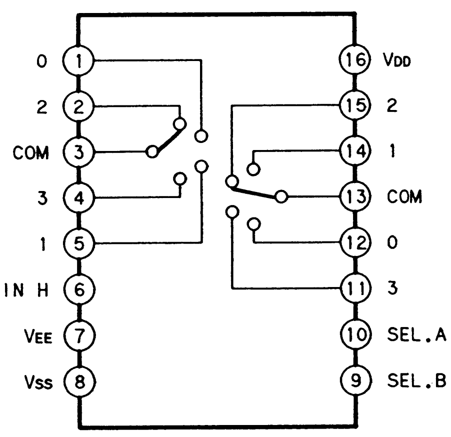
IC1 LA5601


Cd
Vin
AMP
V REF
AMP
Vo
Vomute
RESET
RES
ON/OFF
Cn
GND
EN
Vid
Vod

IC301 XR1091DCP

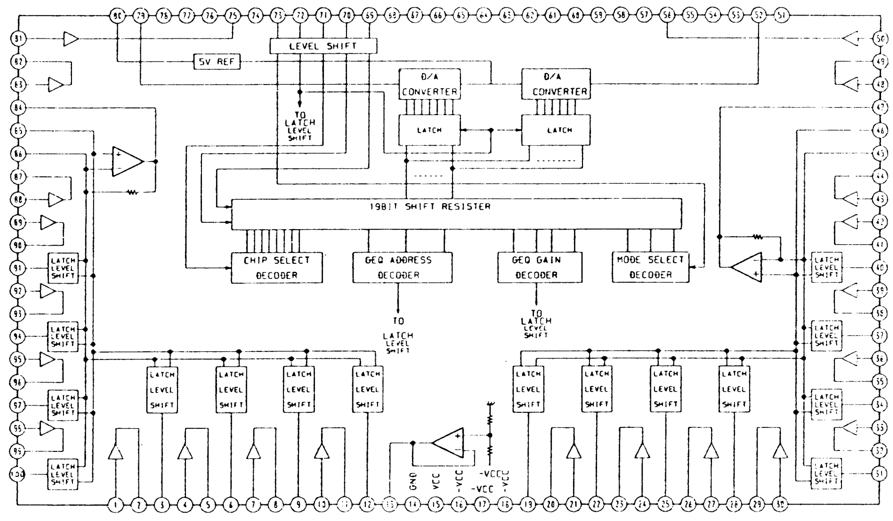

OUT 63
OUT 160
OUT 400
OUT 1K
OUT 2.5K
OUT 6.3K
OUT 16K
OUT SUM
63Hz BPF
160Hz BPF
400Hz BPF
1KHz BPF
2.5KHz BPF
6.3KHz BPF
16KHz BPF
Σ
CLOCK GENERATOR
LPF
Σ
VDD
CLK/2
CLK R
CLK C
GND
L IN
R IN
VSS

IC302 CD4025BCM

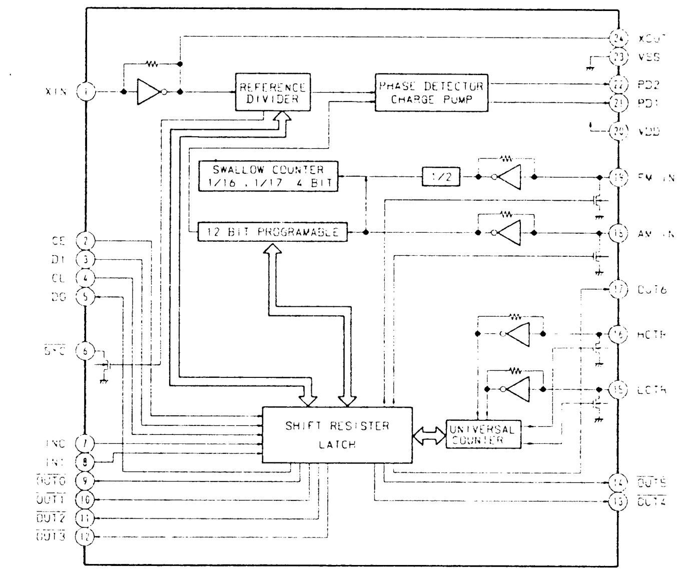

0
2
COM
3
1
IN H
VEE
Vss
VDD
2
1
COM
0
3
SEL.A
SEL.B

IC

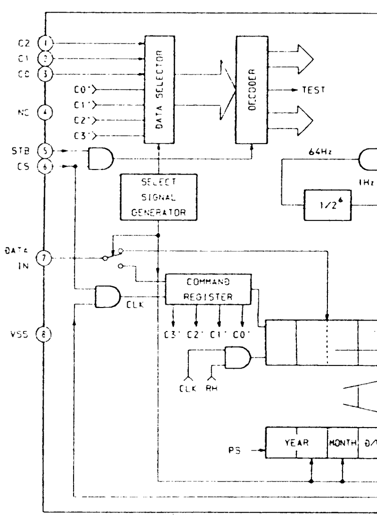
IC205 CXA1492Q


5V REF
LEVEL SHIFT
D/A CONVERTER
D/A CONVERTER
LATCH
LATCH
TO LATCH LEVEL SHIFT
19BIT SHIFT RESISTER
CHIP SELECT DECODER
GEQ ADDRESS DECODER
GEQ GAIN DECODER
MODE SELECT DECODER
TO LATCH LEVEL SHIFT
TO LATCH LEVEL SHIFT
LATCH LEVEL SHIFT
GND
-VCC
VCC
-VCC2

IC21 LC7218M

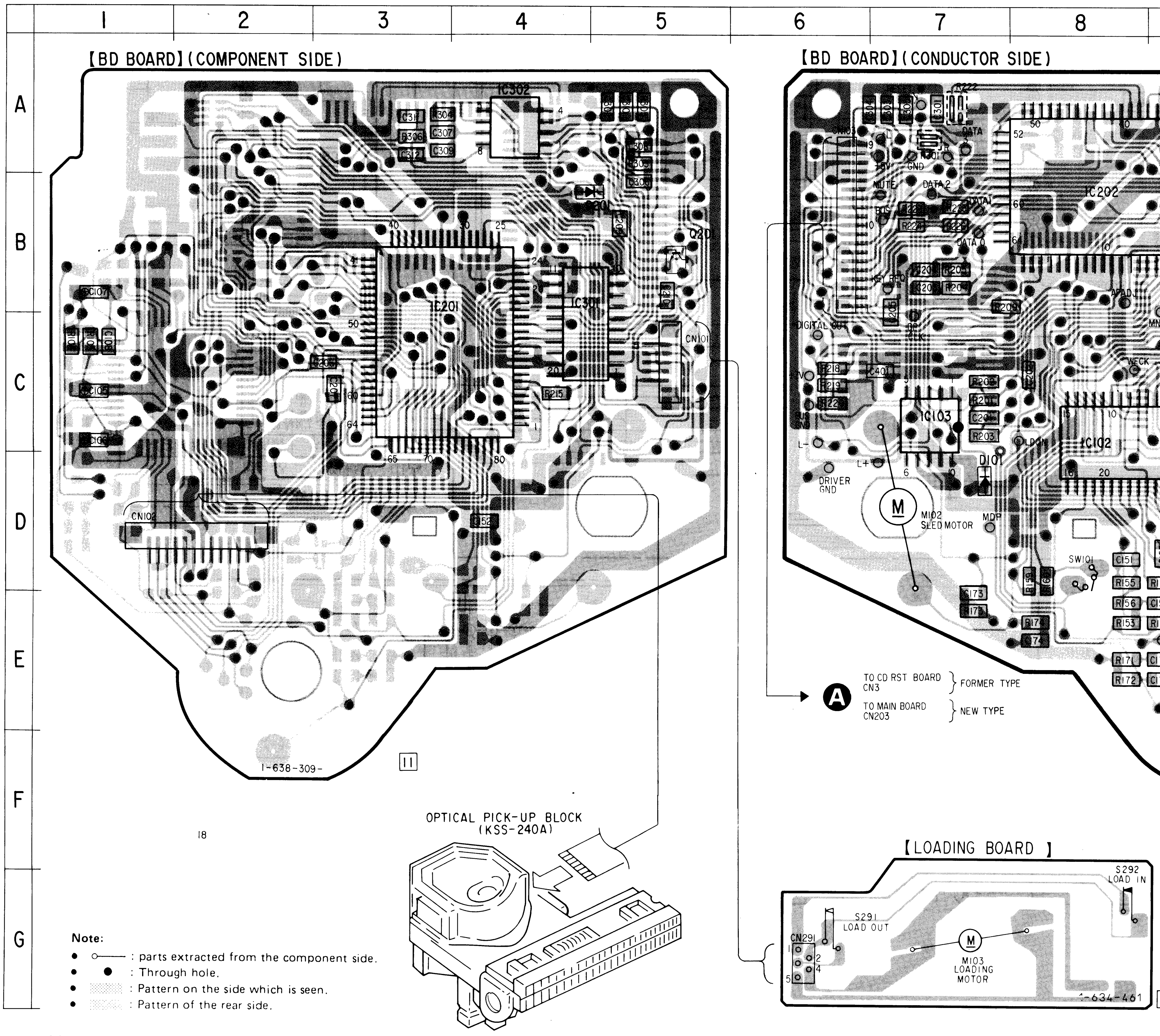

XIN
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
SWALLOW COUNTER 1/16, 1/17 4 BIT
1/2
12 BIT PROGRAMABLE
SHIFT RESISTER LATCH
UNIVERSAL COUNTER
XOUT
VSS
PD2
PD1
VDD
FM IN
AM IN
OUT6
HCTR
LCTR
OUT8
OUT2
CE
DI
CL
DO
SYC
INO
IN1
OUT0
OUT1
OUT2
OUT3

IC303 μPD4990AG


C2
C1
C0
XC
STB
CS
DATA IN
VSS
DATA SELECTOR
DECODER
TEST
64Hz
SELECT SIGNAL GENERATOR
1/2
COMMAND REGISTER
CLK
YEAR
MONTH

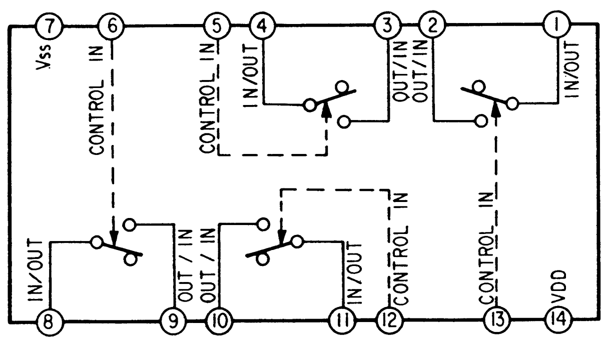
4-7. PRINTED WIRING BOARDS — CD Section —

Ref. No.	Location
D101	J-7
D201	H-5
IC101	C-10
IC102	C-8
IC103	C-7
IC201	C-3
IC202	B-8
IC301	C-5
IC302	A-4
Q101	B-10
Q201	B-5

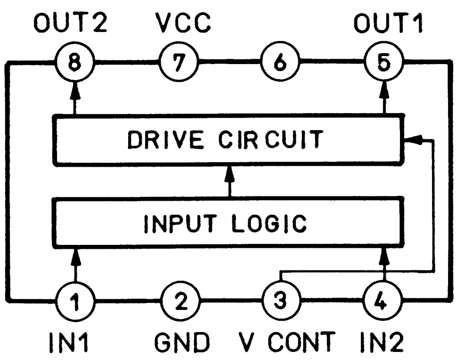

1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
【BD BOARD】(COMPONENT SIDE)
【BD BOARD】(CONDUCTOR SIDE)
IC302
IC201
IC301
IC202
IC103
IC102
CN101
CN102
Q201
D201
D101
1-638-309-
11
OPTICAL PICK-UP BLOCK (KSS-240A)
DIGITAL OUT
DRIVER GND
M102 SLED MOTOR
MDP
SW101
TO CD RST BOARD CN3
FORMER TYPE
TO MAIN BOARD CN203
NEW TYPE
A
【LOADING BOARD】
S291 LOAD OUT
S292 LOAD IN
CN291
M103 LOADING MOTOR
1-634-461

Note:
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

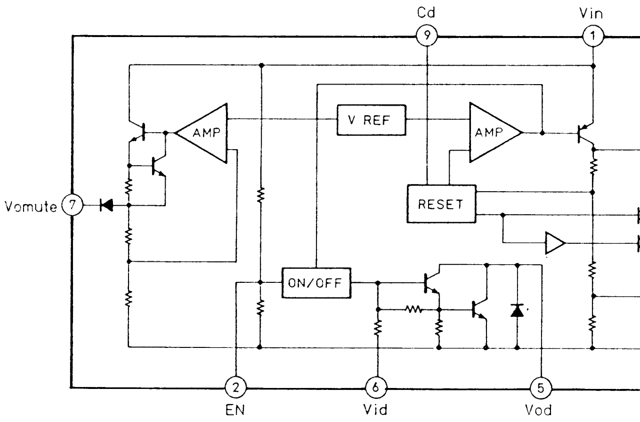
IC204 CD4066BCM


Vss
CONTROL IN
CONTROL IN
IN/OUT
OUT/IN
OUT/IN
IN/OUT
IN/OUT
OUT / IN
OUT / IN
IN/OUT
CONTROL IN
CONTROL IN
VDD
1
2
3
4
5
6
7
8
9
10
11
12
13
14

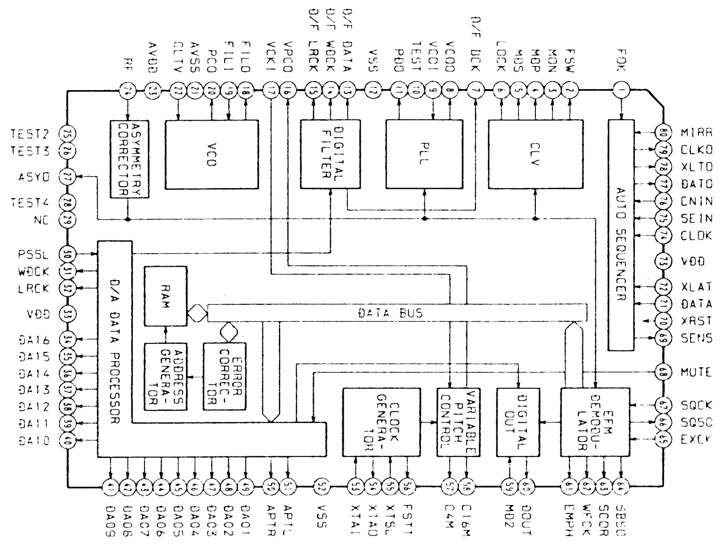
IC395 LB1639


OUT2
VCC
OUT1
DRIVE CIRCUIT
INPUT LOGIC
IN1
GND
V CONT
IN2
1
2
3
4
5
6
7
8

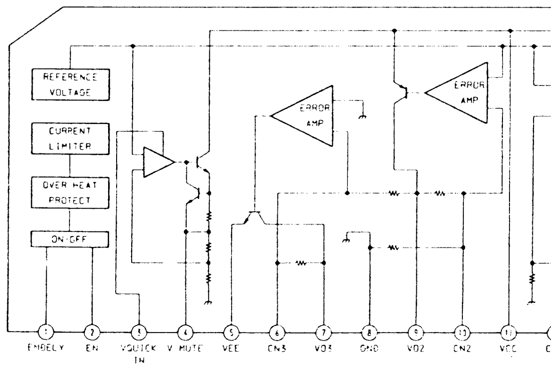
IC1 LA5601


Cd
Vin
AMP
V REF
AMP
RESET
Vomute
ON/OFF
EN
Vid
Vod

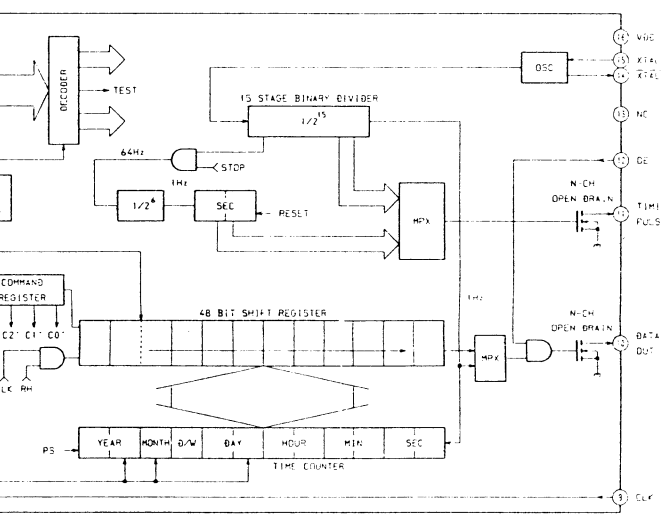
IC201 CXD2505Q

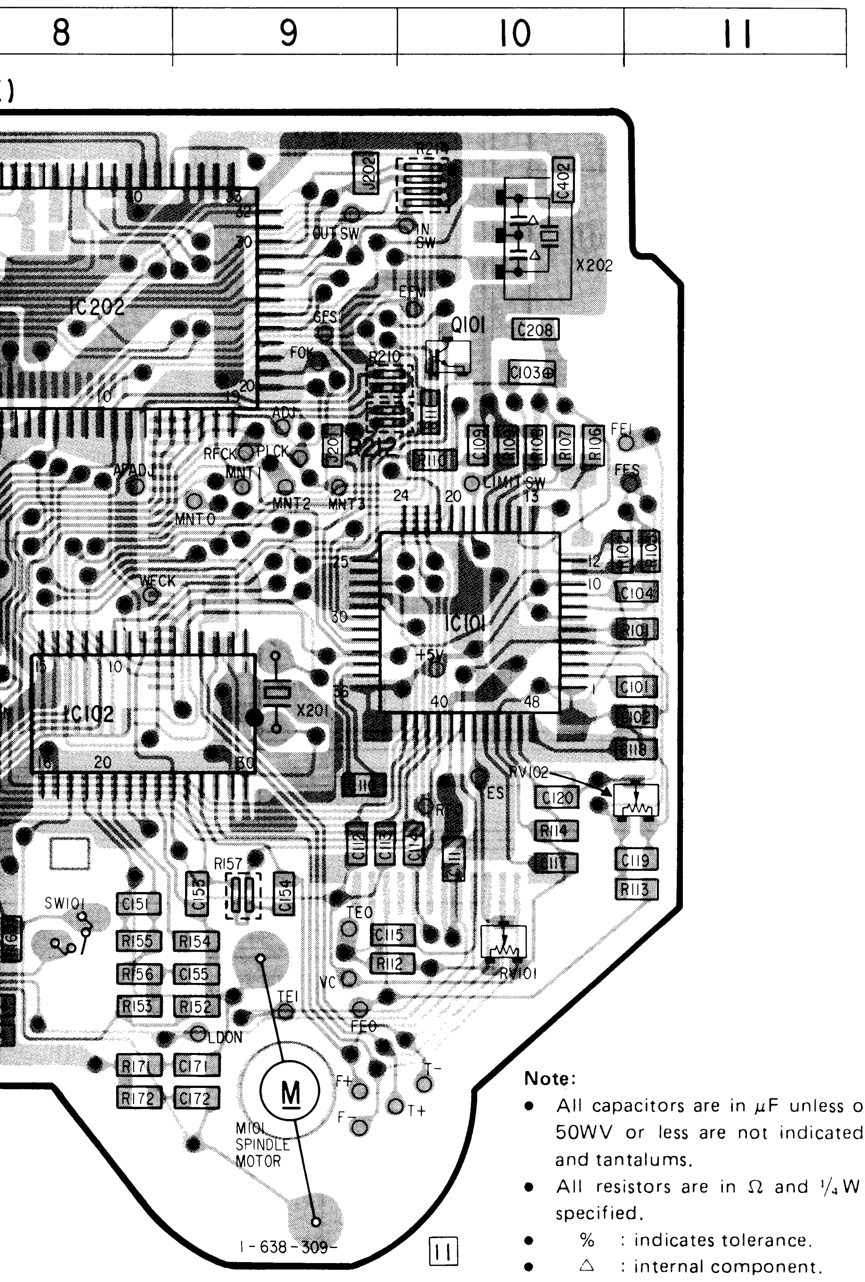

ASYMMETRY CORRECTOR
VCO
DIGITAL FILTER
PLL
CLV
AUTO SEQUENCER
D/A DATA PROCESSOR
RAM
ADDRESS GENERATOR
ERROR CORRECTOR
DATA BUS
CLOCK GENERATOR
VARIABLE PITCH CONTROL
DIGITAL OUT
EFM DEMODULATOR
TEST2
TEST3
ASYO
TEST4
NC
PSSL
WDCK
LRCK
VDD
DA16
DA15
DA14
DA13
DA12
DA11
DA10
MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK

IC207 LA5603


REFERENCE VOLTAGE
CURRENT LIMITER
OVER HEAT PROTECT
ON-OFF
ERROR AMP
ERROR AMP

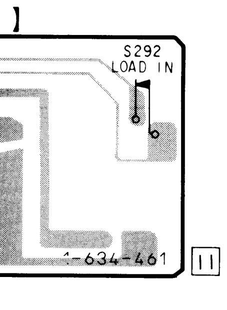
D4990AG


DECODER
TEST
OSC
15 STAGE BINARY DIVIDER
STOP
SEC
RESET
MPX
N-CH OPEN DRAIN
TIMING PULSE
COMMAND REGISTER
48 BIT SHIFT REGISTER
DATA OUT
YEAR
MONTH
D/W
DAY
HOUR
MIN
SEC
TIME COUNTER

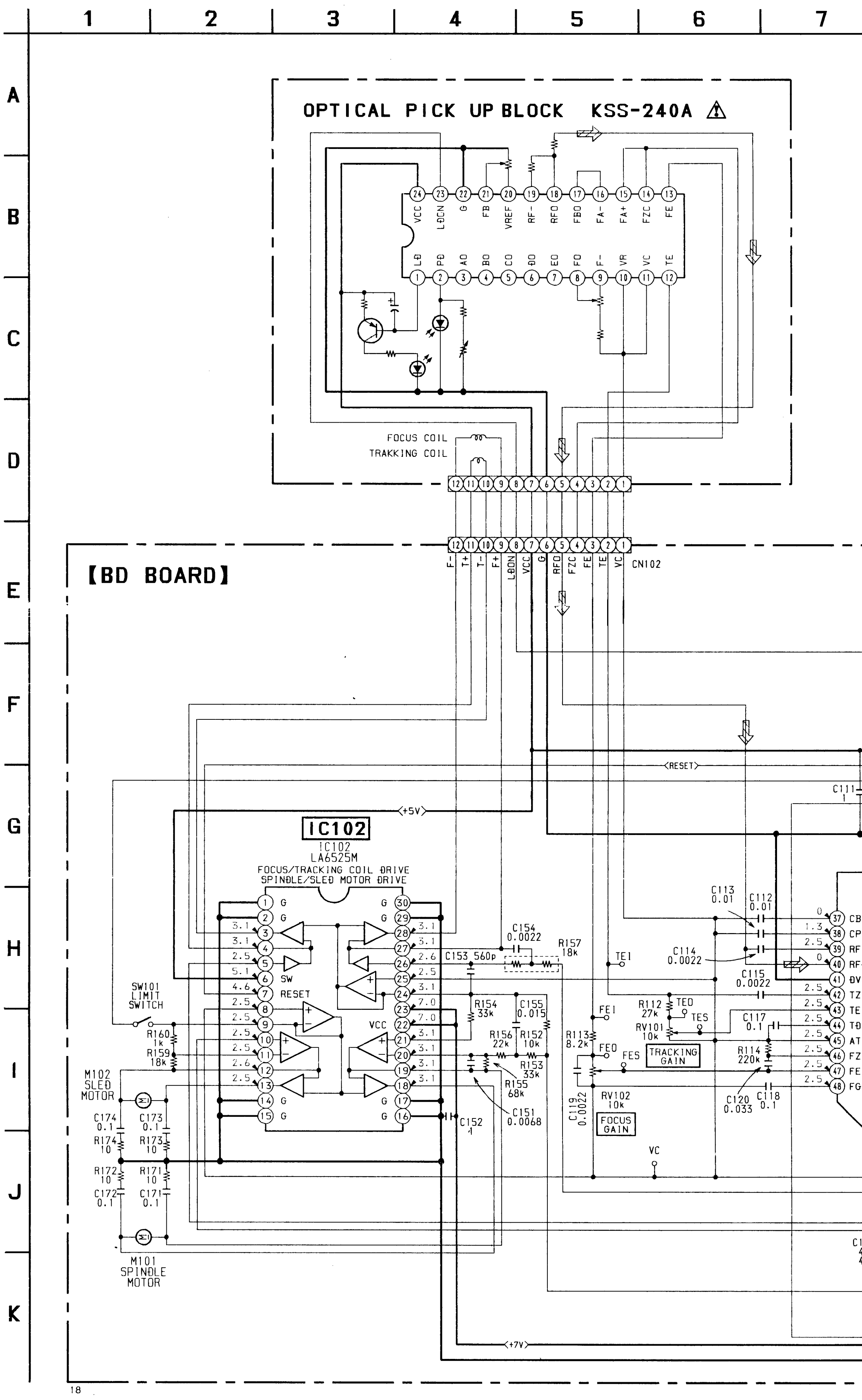

8
9
10
11
IC202
IC101
IC102
X201
X202
Q101
SW101
M101 SPINDLE MOTOR
M
RV101
RV102
1-638-309-
11

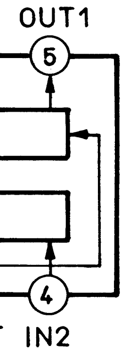
Note:
- All capacitors are in μF unless otherwise noted. pF: $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^1/_4$W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

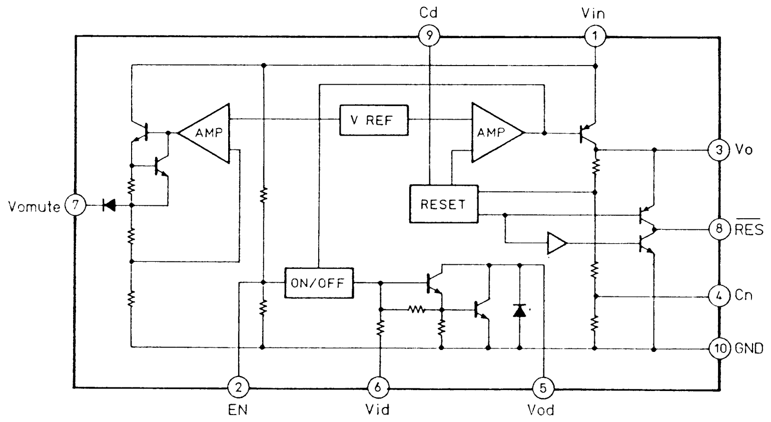

S292
LOAD IN
1-634-461
11

4-8. SCHEMATIC DIAGRAM — CD Section —

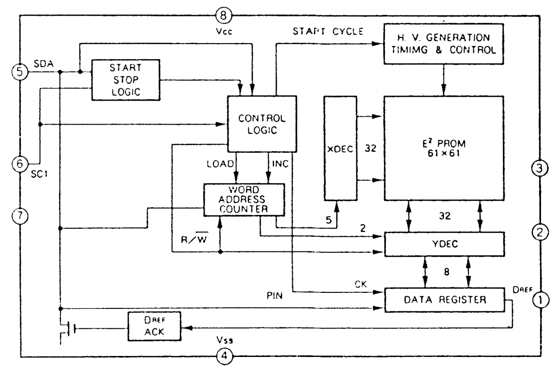

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
OPTICAL PICK UP BLOCK KSS-240A ⚠
FOCUS COIL
TRAKKING COIL
【BD BOARD】
CN102
IC102
IC102 LA6525M
FOCUS/TRACKING COIL DRIVE SPINDLE/SLED MOTOR DRIVE
SW101 LIMIT SWITCH
M102 SLED MOTOR
M101 SPINDLE MOTOR
RESET
TRACKING GAIN
FOCUS GAIN
RV101 10k
RV102 10k
<RESET>
<+5V>
<+7V>
18



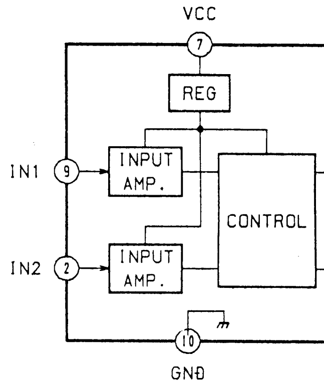
IC1 LA5601


Cd
Vin
V REF
AMP
AMP
RESET
ON/OFF
Vomute
Vo
RES
Cn
GND
EN
Vid
Vod

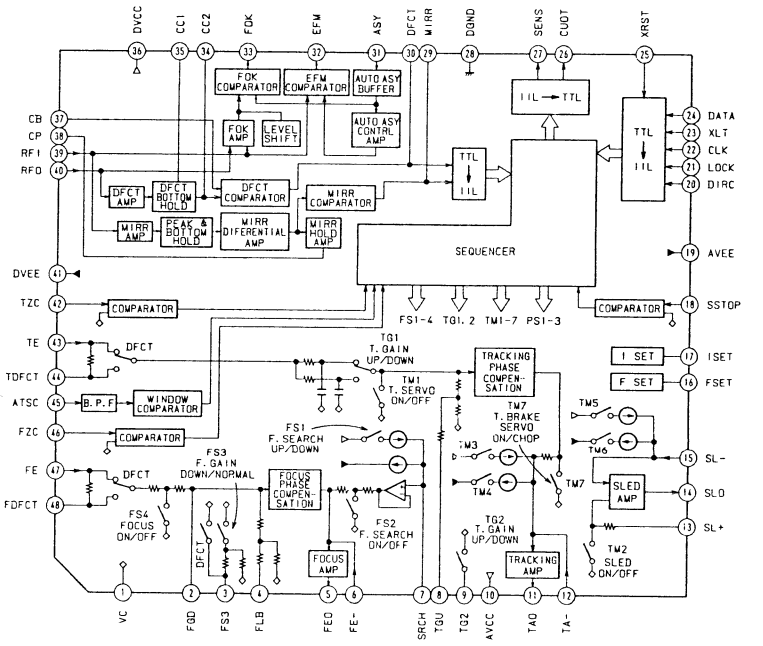
IC304 X24C01P


Vcc
START CYCLE
H. V. GENERATION TIMIMG & CONTROL
SDA
START STOP LOGIC
CONTROL LOGIC
SCl
XDEC
E² PROM 61×61
LOAD
INC
WORD ADDRESS COUNTER
R/W
YDEC
PIN
CK
DATA REGISTER
Dᴏᴜᴛ ACK
Dᴏᴜᴛ
Vss

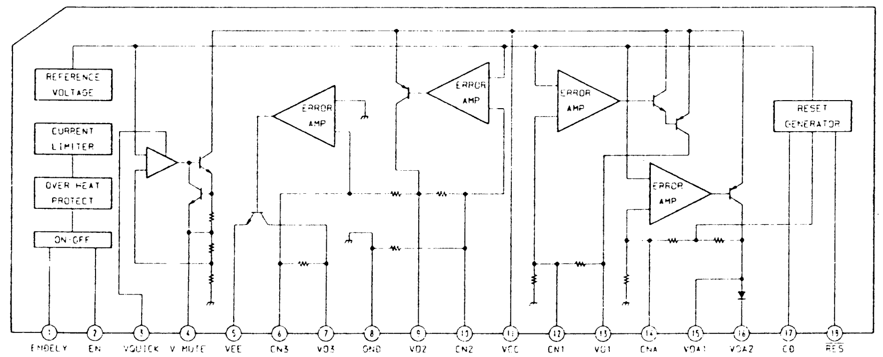
IC103 M54641FP

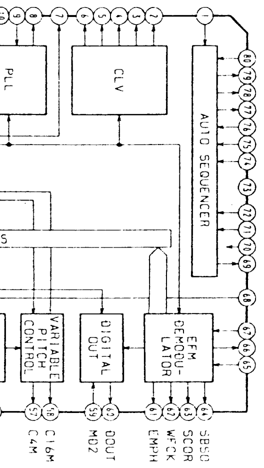

VCC
REG
IN1
INPUT AMP.
CONTROL
IN2
INPUT AMP.
GND

IC101 CXA1372Q

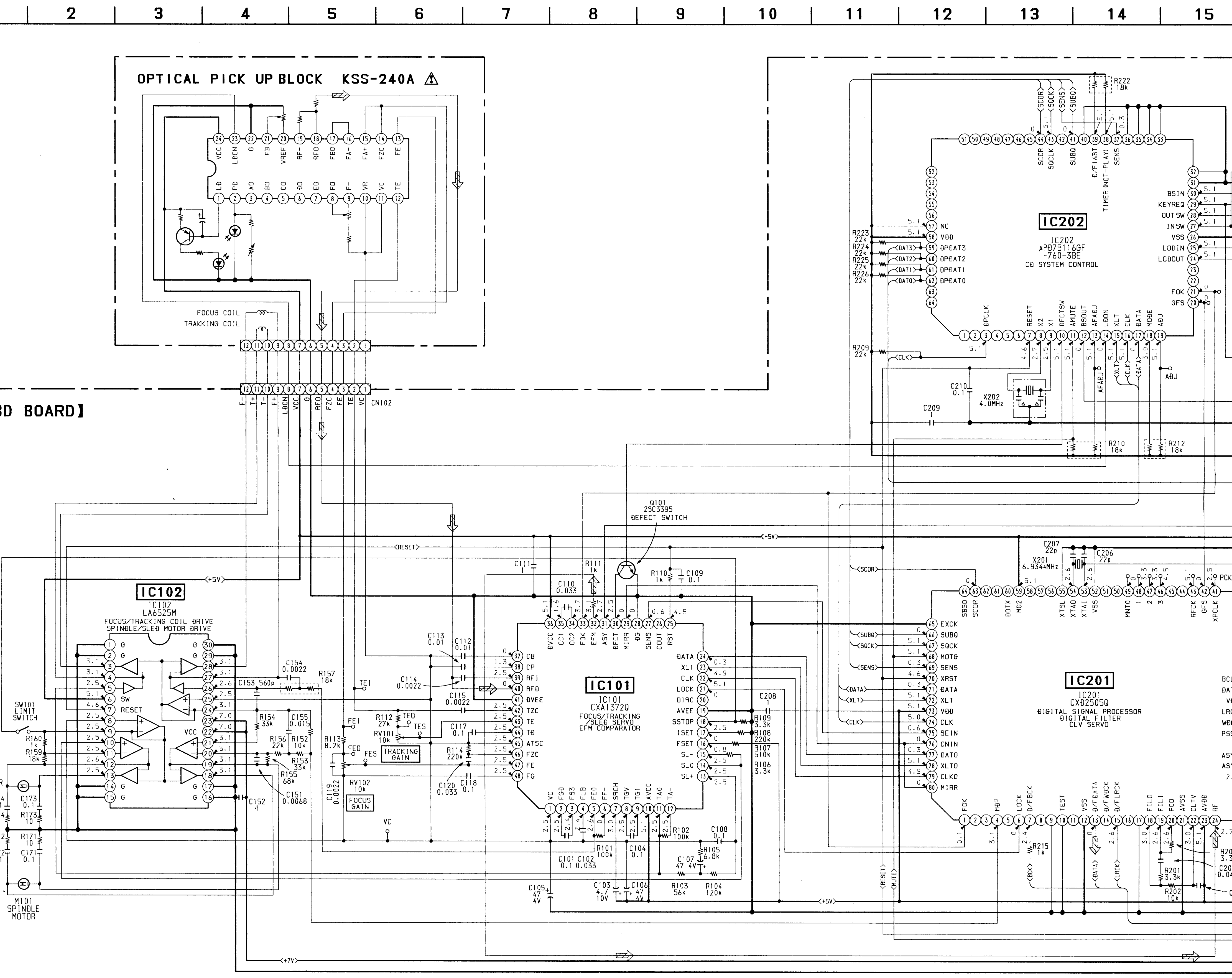

DVCC
CC1
CC2
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
CDUT
XRST
CB
CP
RFI
RFO
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
FOK AMP
LEVEL SHIFT
AUTO ASY CONTRL AMP
DFCT AMP
DFCT BOTTOM HOLD
DFCT COMPARATOR
MIRR COMPARATOR
MIRR AMP
PEAK & BOTTOM HOLD
MIRR DIFFERENTIAL AMP
MIRR HOLD AMP
SEQUENCER
TTL→IIL
DATA
XLT
CLK
LOCK
DIRC
AVEE
DVEE
TZC
COMPARATOR
SSTOP
FS1-4 TG1,2 TM1-7 PS1-3
TE
DFCT
TG1 T.GAIN UP/DOWN
TRACKING PHASE COMPEN-SATION
I SET
ISET
F SET
FSET
TDFCT
ATSC
B.P.F
WINDOW COMPARATOR
TM1 T.SERVO ON/OFF
TM7 T.BRAKE SERVO ON/CHOP
TM5
FZC
FS1 F.SEARCH UP/DOWN
TM3
TM6
SL-
FE
FS3 F.GAIN DOWN/NORMAL
FOCUS PHASE COMPEN-SATION
TM4
SLED AMP
SLO
FDFCT
FS4 FOCUS ON/OFF
FS2 F.SEARCH ON/OFF
TG2 T.GAIN UP/DOWN
SL+
FOCUS AMP
TRACKING AMP
TM2 SLED ON/OFF
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AVCC
TAO
TA-

IC207 LA5603

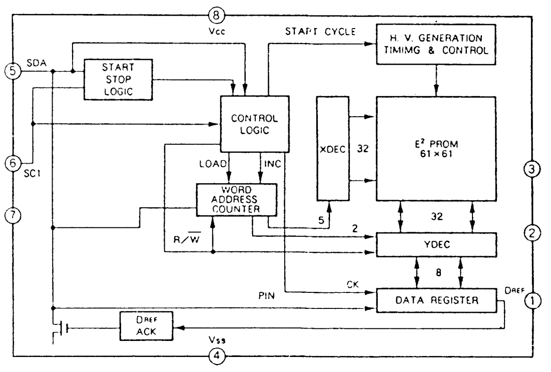

REFERENCE VOLTAGE
CURRENT LIMITER
OVER HEAT PROTECT
ON OFF
ERROR AMP
ERROR AMP
ERROR AMP
ERROR AMP
RESET GENERATOR
EMBEELK
EN
VQUICK IN
V MUTE
VEE
CN3
VO3
GND
VO2
CN2
VCC
CN1
VO1
CN4
VO4
VCA2
CD
RES


PLL
CLV
AUTO SEQUENCER
VARIABLE PITCH CONTROL
DIGITAL OUT
EFM DEMODU-LATOR
MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK

EMATIC DIAGRAM —— CD Section ——

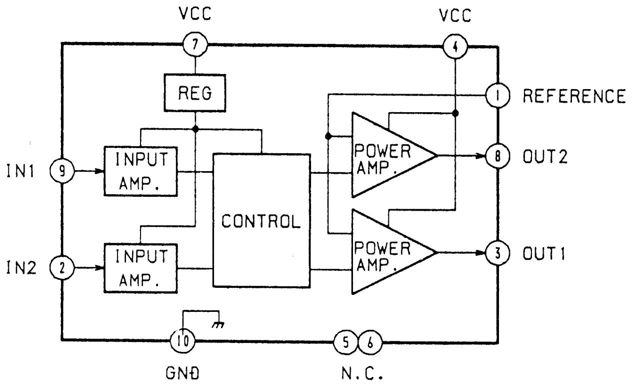

2
3
4
5
6
7
8
9
10
11
12
13
14
15
OPTICAL PICK UP BLOCK KSS-240A ⚠
FOCUS COIL
TRAKKING COIL
BD BOARD】
CN102
IC102
LA6525M
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE
SW101 LIMIT SWITCH
M101 SPINDLE MOTOR
IC101
CXA1372Q
FOCUS/TRACKING /SLED SERVO EFM COMPARATOR
Q101 2SC3395 DEFECT SWITCH
TRACKING GAIN
FOCUS GAIN
IC202
μPD75116GF -760-3BE
CD SYSTEM CONTROL
X202 4.0MHz
IC201
CXD2505Q
DIGITAL SIGNAL PROCESSOR DIGITAL FILTER CLV SERVO
X201 6.9344MHz
(+5V)
(+7V)
(RESET)

IC304 X24C01P



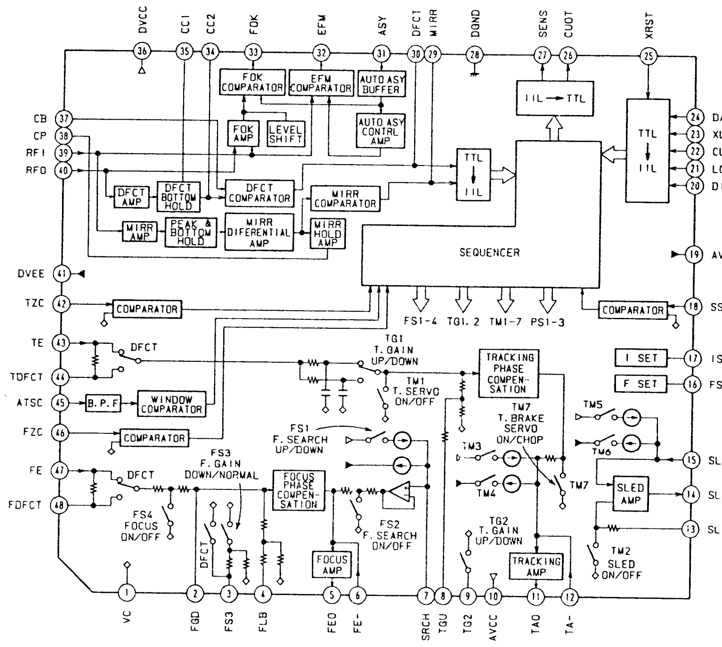
Vcc
START CYCLE
H.V. GENERATION TIMIMG & CONTROL
SDA
START STOP LOGIC
CONTROL LOGIC
XDEC
E² PROM 64×61
SCl
LOAD
INC
WORD ADDRESS COUNTER
R/W
YDEC
CK
PIN
DATA REGISTER
Dᴘᴇʀ
Dᴘᴇʀ ACK
Vss

IC103 M54641FP



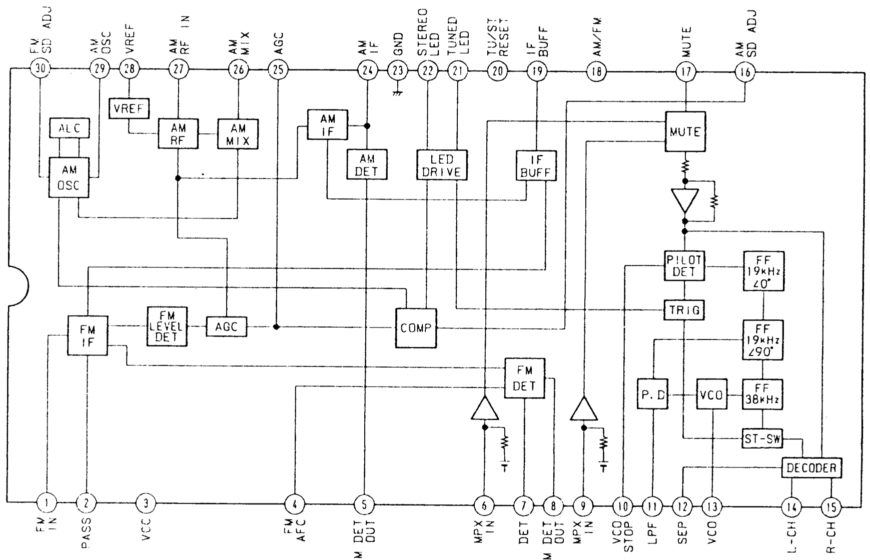
VCC
VCC
REG
REFERENCE
IN1
INPUT AMP.
CONTROL
POWER AMP.
OUT2
IN2
INPUT AMP.
POWER AMP.
OUT1
GND
N.C.

IC101 CXA1372Q

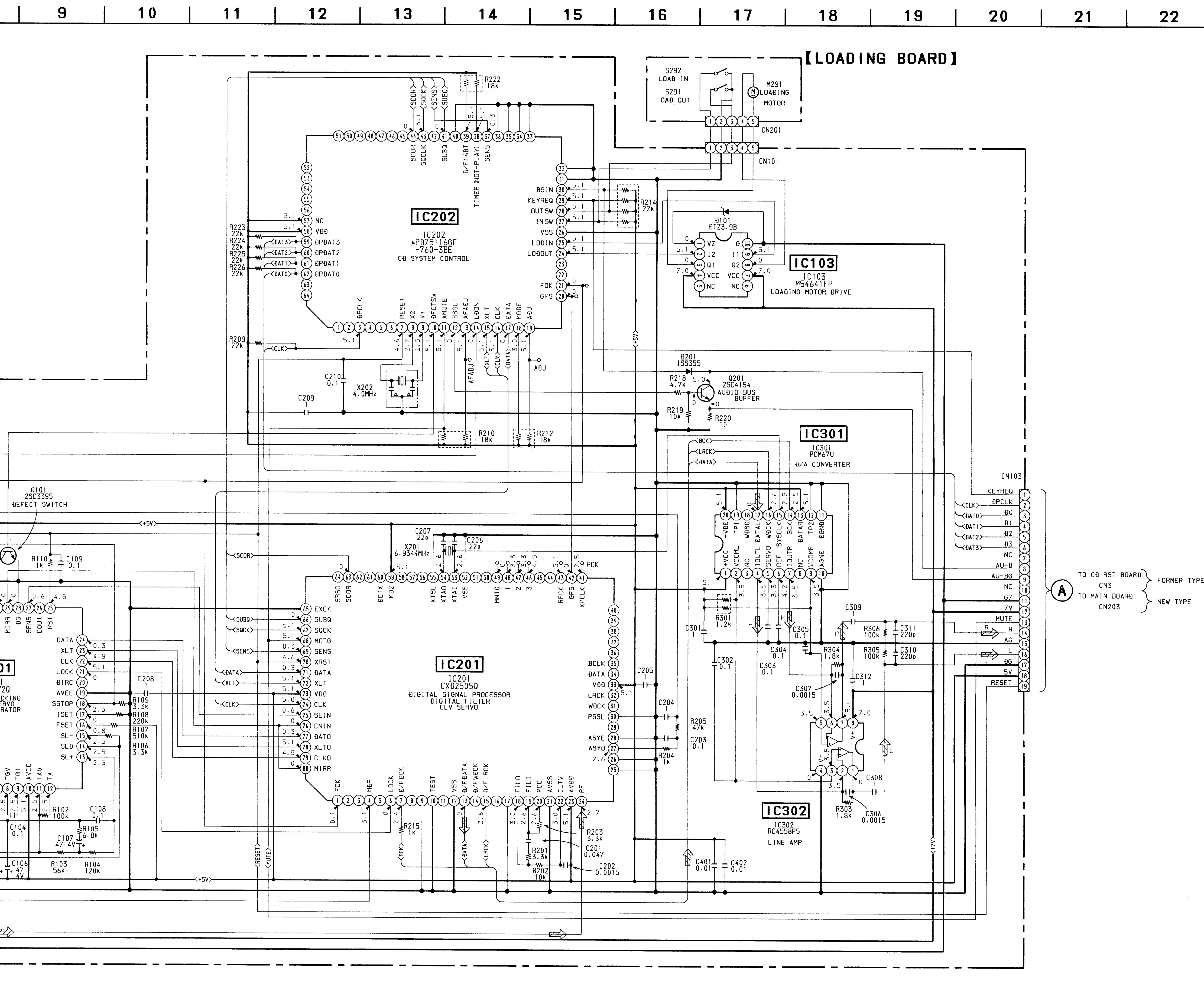


DVCC
CC1
CC2
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
C.OUT
XRST
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
AUTO ASY CONTROL AMP
FOK AMP
LEVEL SHIFT
TTL→I²L
DATA
XLT
CLK
LOCK
DIRC
CB
CP
RFI
RFO
DFCT AMP
DFCT BOTTOM HOLD
DFCT COMPARATOR
MIRR COMPARATOR
MIRR AMP
PEAK & BOTTOM HOLD
MIRR DIFFERENTIAL AMP
MIRR HOLD AMP
SEQUENCER
AVEE
DVEE
TZC
COMPARATOR
FS1-4
TG1.2
TM1-7
PS1-3
COMPARATOR
SSTOP
TE
TG1 T.GAIN UP/DOWN
TM1 T.SERVO ON/OFF
TRACKING PHASE COMPENSATION
I SET
ISET
TDFCT
F SET
FSET
ATSC
B.P.F.
WINDOW COMPARATOR
TM7 T.BRAKE SERVO ON/CHOP
TM5
TM6
FZC
COMPARATOR
FS1 F.SEARCH UP/DOWN
TM3
TM4
SL-
FE
FS3 F.GAIN DOWN/NORMAL
FOCUS PHASE COMPENSATION
TM7
SLED AMP
SLO
FDFCT
DFCT
FS4 FOCUS ON/OFF
FS2 F.SEARCH ON/OFF
TG2 T.GAIN UP/DOWN
SL+
TM2 SLED ON/OFF
FOCUS AMP
TRACKING AMP
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AVCC
TAO
TA-

IC51 LA1851NM



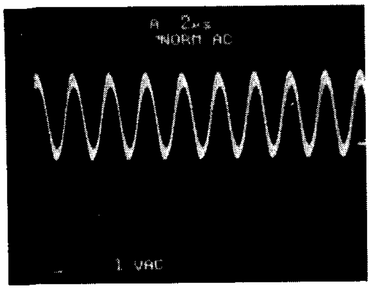
FM SD ADJ
AM OSC
VREF
AM RF IN
AM MIX
AGC
AM IF
GND
STEREO LED
TUNED LED
TU/ST RESET
IF BUFF
AM/FM
MUTE
AM SD ADJ
ALC
AM OSC
VREF
AM RF
AM MIX
AM IF
AM DET
LED DRIVE
IF BUFF
MUTE
PILOT DET
FF 19kHz ∠0°
TRIG
FM IF
FM LEVEL DET
AGC
COMP
FF 19kHz ∠90°
FM DET
P.D
VCO
FF 38kHz
ST-SW
DECODER
FM IN
PASS
VCC
FM AFC
AM DET OUT
MPX IN
DET
FM DET OUT
MPX IN
VCO STOP
LPF
SEP
VCO
L-CH
R-CH



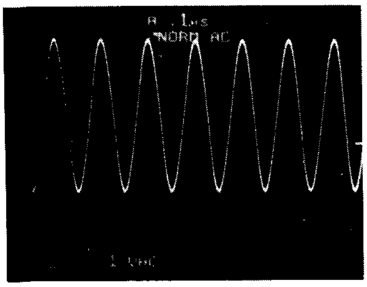
9
10
11
12
13
14
15
16
17
18
19
20
21
22
【LOADING BOARD】
S292 LOAD IN
S291 LOAD OUT
M291 LOADING MOTOR
CN201
CN101
R222 18k
SCOR
SQCK
SENS
SUBQ
IC202
IC202 μPD75116GF -760-3BE
CD SYSTEM CONTROL
BSIN
KEYREQ
OUTSW
INSW
VSS
LODIN
LODOUT
FOK
GFS
R214 22k
NC
VDD
DPDAT3
DPDAT2
DPDAT1
DPDAT0
R223 22k
R224 22k
R225 22k
R226 22k
DPCLK
RESET
X2
X1
DFCTSW
AMUTE
BSOUT
AFADJ
LODON
XLT
CLK
DATA
MODE
ADJ
TIMER (NOT-PLAY)
Ø/F16BT
R209 22k
C210 0.1
X202 4.0MHz
C209 1
R210 18k
R212 18k
D101 DTZ3.9B
IC103
IC103 M54641FP
LOADING MOTOR DRIVE
D201 1SS355
Q201 2SC4154
AUDIO BUS BUFFER
R218 4.7k
R219 10k
R220 10
IC301
IC301 PCM67U
D/A CONVERTER
BCK
LRCK
DATA
CN103
KEYREQ
DPCLK
D0
D1
D2
D3
NC
AU-B
AU-BG
NC
G7
7V
MUTE
R
AG
L
DG
5V
RESET
TO CD RST BOARD CN3
FORMER TYPE
TO MAIN BOARD CN203
NEW TYPE
A
Q101 2SC3395
DEFECT SWITCH
R110 1k
C109 0.1
C207 22p
X201 6.9344MHz
C206 22p
PCK
IC201
IC201 CXD2505Q
DIGITAL SIGNAL PROCESSOR
DIGITAL FILTER
CLV SERVO
EXCK
SUBQ
SQCK
MUTG
SENS
XRST
DATA
XLT
VDD
CLK
SEIN
CNIN
DATO
XLTO
CLKO
MIRR
BCLK
DATA
VDD
LRCK
WDCK
PSSL
ASYE
ASYO
C205 1
C204 1
R205 47k
C203 0.1
R204 1k
DATA
XLT
CLK
LOCK
DIRC
AVEE
SSTOP
ISET
FSET
SL-
SLO
SL+
C208 1
R109 3.3k
R108 220k
R107 510k
R106 3.3k
R102 100k
C108 0.1
R105 6.8k
C107 47 4V
C104 0.1
C106 47 4V
R103 56k
R104 120k
R215 1k
R203 3.3k
C201 0.047
R201 3.3k
R202 10k
C202 0.0015
C401 0.01
C402 0.01
R301 1.2k
C301 1
C302 0.1
C303 0.1
C304 0.1
C305 0.1
R304 1.8k
C307 0.0015
C309 1
R306 100k
C311 220p
R305 100k
C310 220p
C312 1
C308 1
R303 1.8k
C306 0.0015
IC302
IC302 RC4558PS
LINE AMP
+5V

4-9. WAVEFORMS

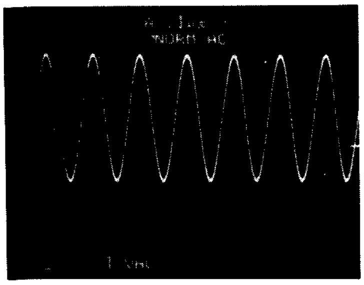
①IC51⑬pin



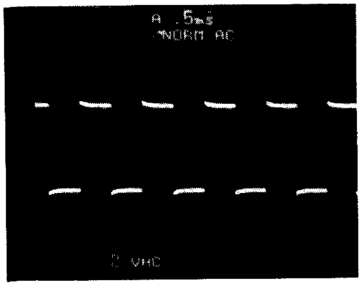
②IC21㉔ pin



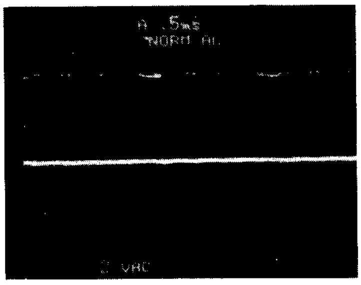
③IC21① pin



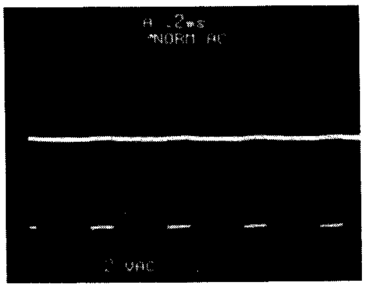
④IC305① pin



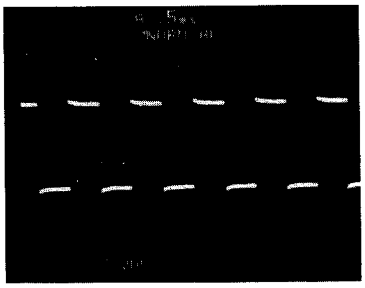
⑤IC305③ pin



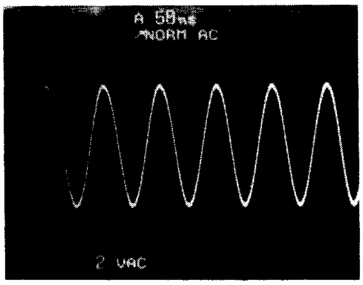
⑥IC305④ pin



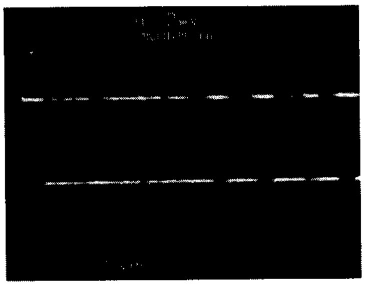
⑦IC305⑬ pin



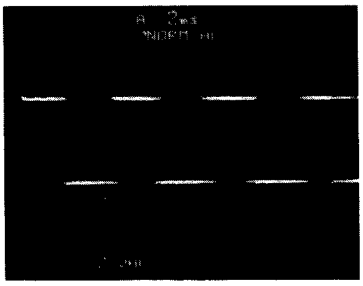
⑧IC305㉜ pin



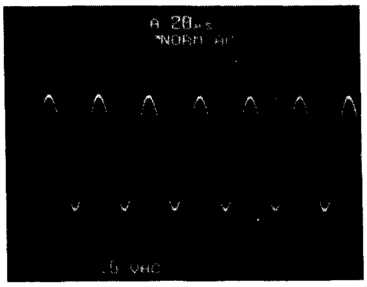
⑨IC305㉞ pin



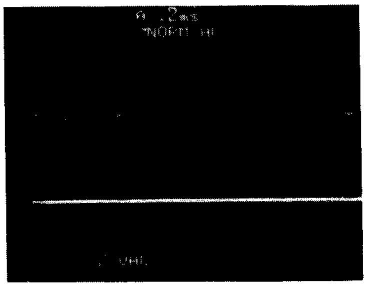
⑩IC305㉟ pin



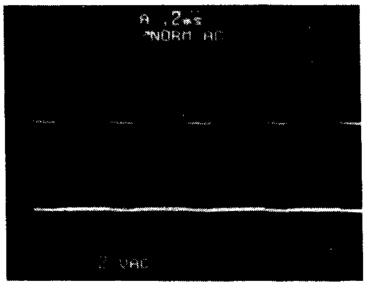
⑪IC303⑭ pin



⑫IC307㉚,㉛ pin



⑬IC307㉞ pin



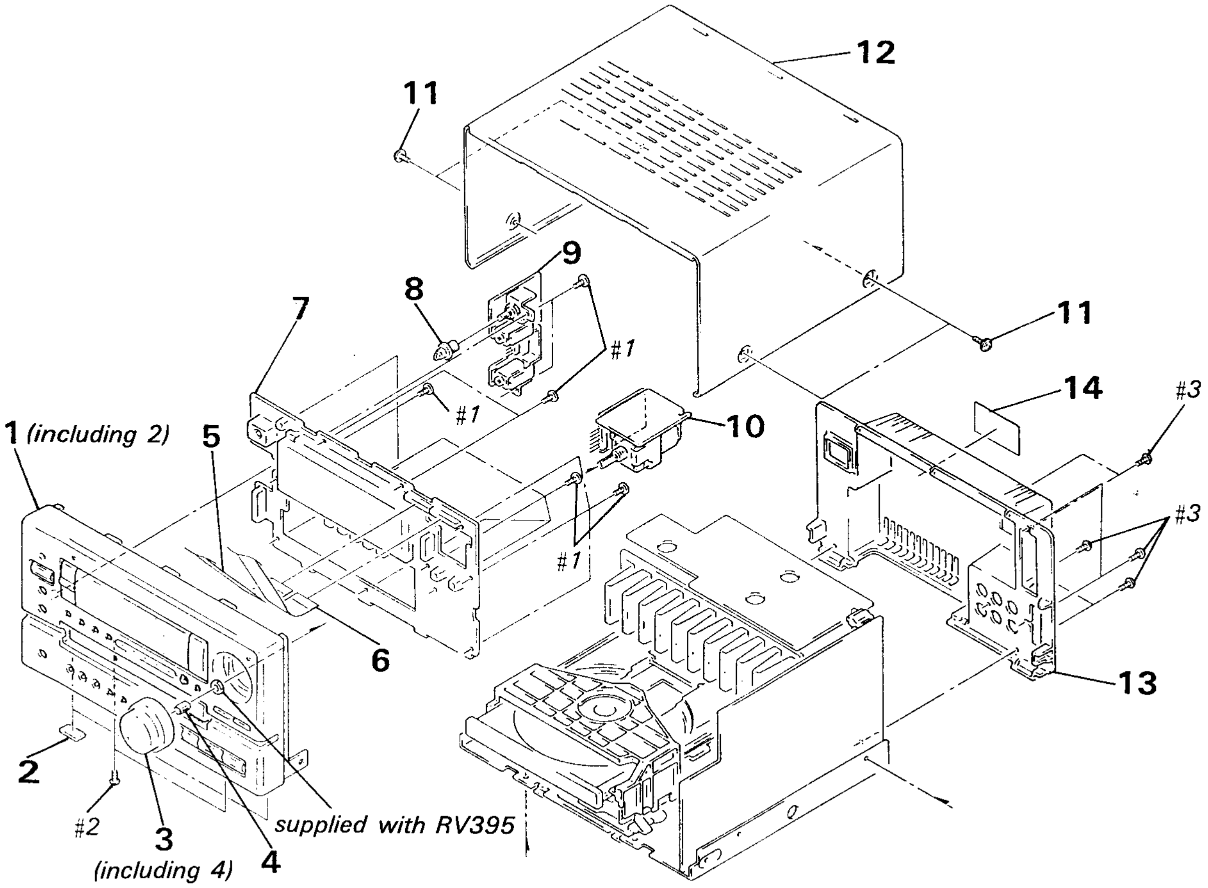
SECTION 5
EXPLODED VIEWS

NOTE:
- −XX, −X mean standardized parts, so they may have some differences from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE(WHITE)...(RED)
  ↑ ↑
  Part's Color Cabinet's Color
- Hardware (#mark) list is given in the last of this parts list.

NEW TYPE : AEP, G, IT, UK
FORMER TYPE : AEP, UK
G : Germany
IT : Italian

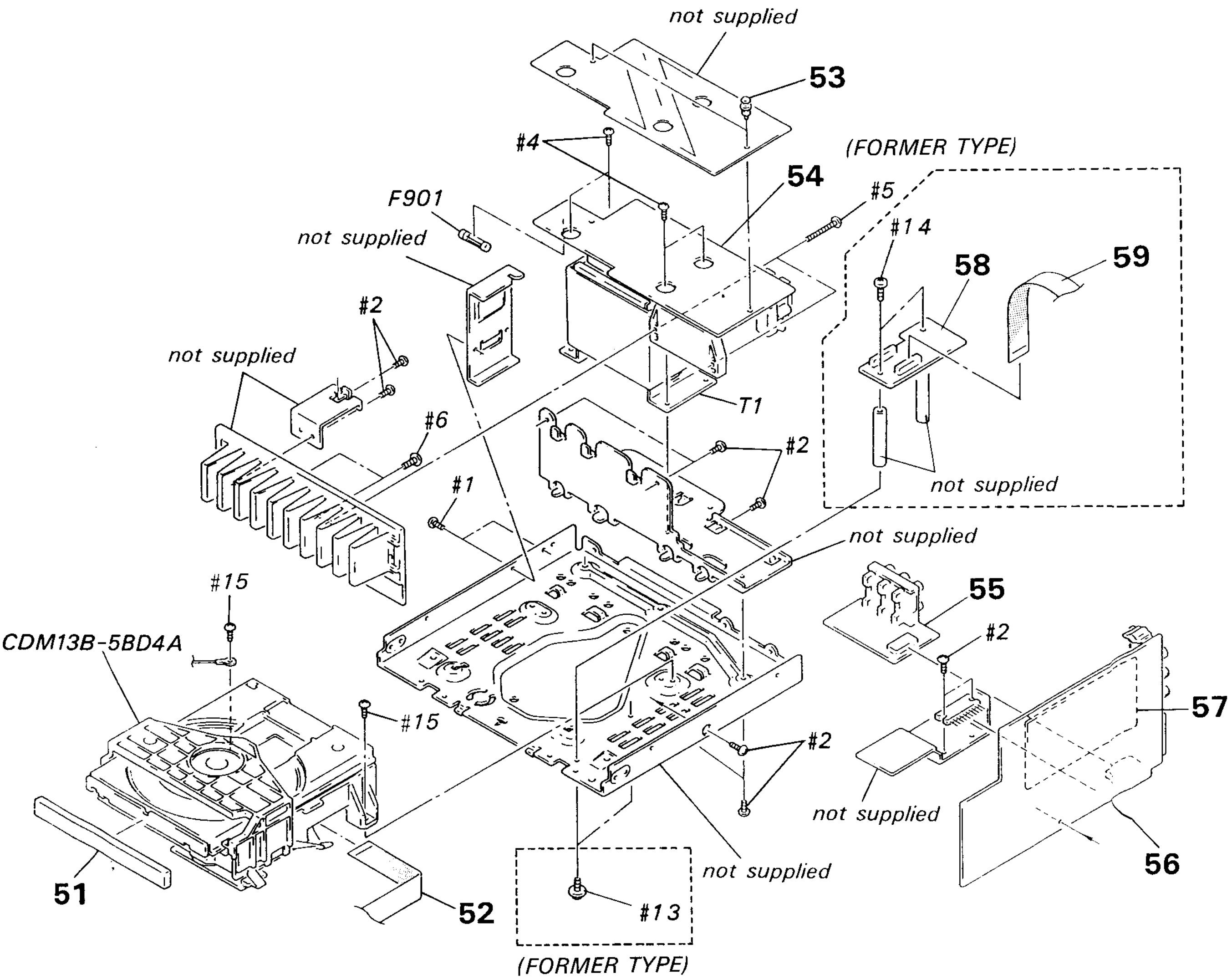
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	X-4941-581-1	PANEL ASSY, FRONT	
2	4-930-336-01	FOOT (FELT)	
3	X-4941-489-1	KNOB (VOLUME) ASSY	
4	3-703-466-00	SPRING (6600)	
5	1-590-907-11	WIRE, FLAT TYPE (20 CORE)	
6	1-590-908-11	WIRE, FLAT TYPE (20 CORE)	
7	* A-4341-658-A	PANEL BOARD, COMPLETE (AEP, UK)	
7	* A-4341-707-A	PANEL BOARD, COMPLETE (IT)	
7	* A-4341-664-A	PANEL BOARD, COMPLETE (G)	
8	4-932-882-11	KNOB (HP, VOL)	
9	* 1-638-882-11	JACK BOARD	
10	* 1-638-884-11	VR BOARD	
11	3-704-366-01	SCREW (CASE) (M3X8)	
12	* 4-944-213-01	CASE	
13	* 4-944-211-21	PANEL, BACK	
14	* 4-941-548-01	LABEL, CLASS 1	

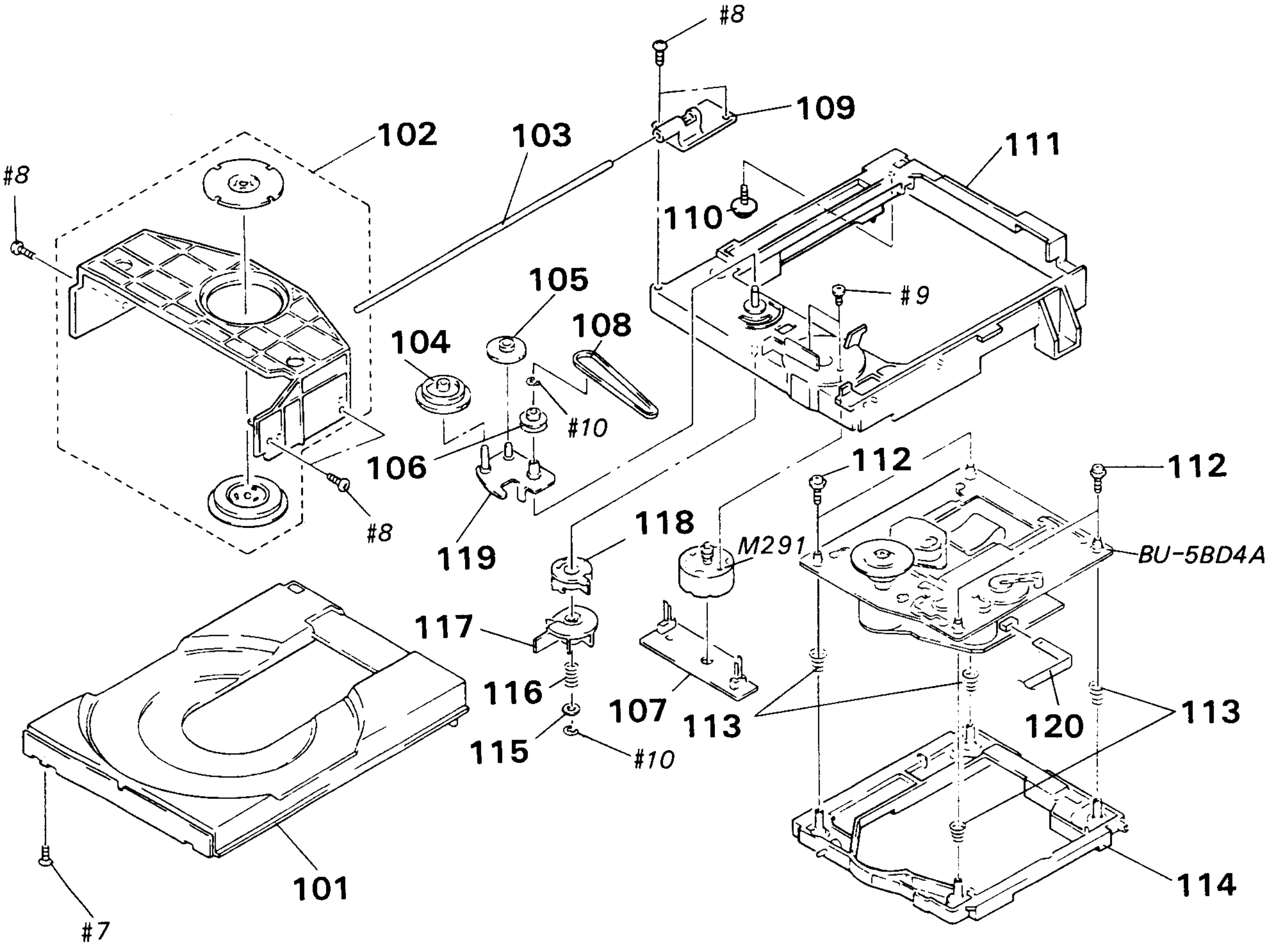
5-2. CHASSIS SECTION


not supplied
53
#4
(FORMER TYPE)
54
F901
#5
not supplied
#14
58
59
#2
not supplied
#6
T1
#2
#1
not supplied
not supplied
#15
55
#2
CDM13B-5BD4A
57
#15
#2
not supplied
56
51
not supplied
52
#13
(FORMER TYPE)

Ref. No.	Part No.	Description	Remark
51	4-944-199-01	PANEL, LOADING	
52	1-590-906-11	WIRE, FLAT TYPE (19 CORE)	
53	4-812-134-31	RIVET NYLON, 3.5	
54	* A-4341-652-A	POWER BOARD, COMPLETE (AEP, UK)	
54	* A-4341-653-A	POWER BOARD, COMPLETE (UK)	
54	* A-4341-661-A	POWER BOARD, COMPLETE (G)	
55	* 1-638-883-11	PIN JACK BOARD	
56	* A-4341-657-A	MAIN BOARD, COMPLETE (AEP, UK)	
56	* A-4341-662-A	MAIN BOARD, COMPLETE (G, IT)	
57	* A-4303-343-A	TCB011 BOARD, COMPLETE (AEP, UK)	
57	* A-4303-344-A	TCB011 BOARD, COMPLETE (G, IT)	
58	* 1-639-977-11	CD RST BOARD (FORMER TYPE)	
59	1-690-035-11	WIRE, FLAT TYPE (19 CORE) (FORMER TYPE)	
F901	⚠ 1-532-078-00	FUSE, TIME-LAG T1A	
T1	⚠ 1-450-412-11	TRANSFORMER, POWER	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

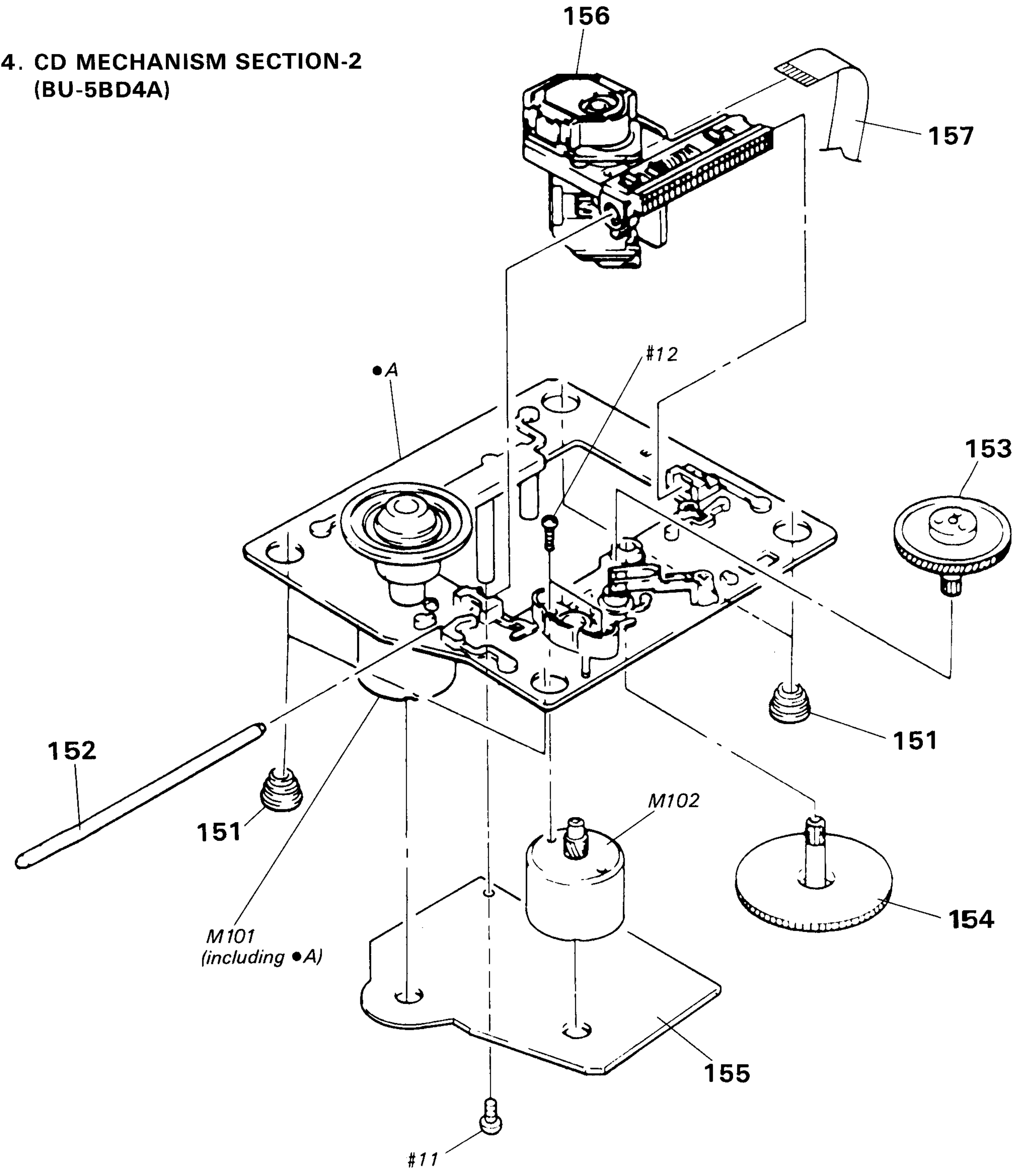
5-3. CD MECHANISM SECTION-1 (CDM13B-5BD4A)


#8
109
102
103
111
#8
110
105
#9
104
108
#10
106
112
112
118
M291
BU-5BD4A
119
#8
117
116
107
113
120
113
115
#10
101
114
#7

Ref. No.	Part No.	Description	Remark
101	4-944-012-01	TABLE, DISC	
102	A-4604-752-A	HOLDER (MG) ASSY	
103	4-929-764-01	SHAFT (TABLE GUIDE)	
104	4-927-620-11	GEAR (P)	
105	4-927-628-01	GEAR (C)	
106	4-929-724-01	PULLEY (B)	
107	* 1-638-308-11	LOADING BOARD	
108	4-927-649-01	BELT	
109	4-944-006-01	BEARING	
110	* 4-917-583-21	BRACKET, YOKE	
111	X-4941-462-1	CHASSIS (MD) ASSY	

Ref. No.	Part No.	Description	Remark
112	4-933-134-01	SCREW (+PTPWH M2.6X6)	
113	4-917-541-01	SPRING (B)	
114	4-929-747-01	HOLDER (BU)	
115	4-927-654-01	WASHER (LIMITER)	
116	3-659-338-00	SPRING, COMPRESSION	
117	4-929-729-01	CAM (B)	
118	4-929-727-01	CAM (A)	
119	X-4929-703-1	ARM ASSY, SWING	
120	1-590-530-11	WIRE, FLAT TYPE	
M291	A-4608-362-A	MOTOR (L) ASSY	

5-4. CD MECHANISM SECTION-2
(BU-5BD4A)


156
157
#12
•A
153
151
152
151
M102
154
M101
(including •A)
155
#11

Ref. No.	Part No.	Description	Remark
151	4-933-126-01	INSULATOR (A)	
152	4-917-565-01	SHAFT, SLED	
153	4-917-567-01	GEAR (M)	
154	4-917-564-01	GEAR (P), FLATNESS	
155	* A-4617-936-A	BD BOARD, COMPLETE	
156	⚠8-848-144-11	DEVICE, OPTICAL KSS-240A	
157	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MORTOR ASSY (SLED)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

BD

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- −XX, −X mean standardized parts, so they may have some differences from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA··· : μA···, uPA··· : μPA···,
  uPB··· : μPB···, uPC··· : μPC···,
  uPD··· : μPD···
- CAPACITORS
  uF : μF
- COILS
  uH : μH

NEW TYPE : AEP, G, IT, UK
FORMER TYPE : AEP, UK
G : Germany
IT : Italian

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remark
	* A-4617-936-A	BD BOARD, COMPLETE			
		******************			
		< CAPACITOR >			
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C102	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C103	1-135-155-21	TANTALUM CHIP	4.7uF	10%	10V
C104	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C105	1-126-607-11	ELECT CHIP	47uF	20%	4V
C106	1-126-607-11	ELECT CHIP	47uF	20%	4V
C107	1-126-607-11	ELECT CHIP	47uF	20%	4V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-164-346-11	CERAMIC CHIP	1uF		16V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C114	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C115	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C117	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C119	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C120	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C151	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C152	1-164-346-11	CERAMIC CHIP	1uF		16V
C153	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C154	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C155	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C172	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C173	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C202	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C203	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C204	1-164-346-11	CERAMIC CHIP	1uF		16V
C205	1-164-346-11	CERAMIC CHIP	1uF		16V
C206	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C207	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C208	1-164-346-11	CERAMIC CHIP	1uF		16V
C209	1-164-346-11	CERAMIC CHIP	1uF		16V
C210	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C301	1-164-346-11	CERAMIC CHIP	1uF		16V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C305	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C306	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C307	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C308	1-164-346-11	CERAMIC CHIP	1uF		16V
C309	1-164-346-11	CERAMIC CHIP	1uF		16V
C310	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C311	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C312	1-164-346-11	CERAMIC CHIP	1uF		16V
C401	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C402	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-580-858-11	SOCKET, CONNECTOR (SMT) 5P			
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT) 12P			
CN103	1-580-872-41	SOCKET, CONNECTOR (SMT) 19P			
		< DIODE >			
D101	8-719-976-88	DIODE	DTZ3.9B		
D201	8-719-988-62	DIODE	1SS355		

BD CD RST

< IC >

Ref. No.	Part No.	Description	Remark
IC101	8-752-050-82	IC CXA1372Q	
IC102	8-759-823-48	IC LA6525M	
IC103	8-759-636-20	IC M54641FP	
IC201	8-752-340-37	IC CXD2505Q	
IC202	8-759-153-16	IC uPD75116GF-760-3BE	
IC301	8-759-506-63	IC PCM67U	
IC302	8-759-981-95	IC RC4558S	

< CHIP JUMPER >

Ref. No.	Part No.	Description	Remark
J201	1-216-295-11	METAL CHIP 0 5% 1/10W	
J202	1-216-295-11	METAL CHIP 0 5% 1/10W	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q101	8-729-805-45	TRANSISTOR 2SC3395	
Q201	8-729-602-21	TRANSISTOR 2SC4154-F	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R101	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R102	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R103	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R104	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R105	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W	
R108	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R110	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R111	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R112	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R113	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R114	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R152	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R153	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R154	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R155	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R156	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R157	1-236-427-11	NETWORK, RES 18K	
R159	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R160	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R171	1-216-001-00	METAL CHIP 10 5% 1/10W	
R172	1-216-001-00	METAL CHIP 10 5% 1/10W	
R173	1-216-001-00	METAL CHIP 10 5% 1/10W	
R174	1-216-001-00	METAL CHIP 10 5% 1/10W	
R201	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R203	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R204	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R205	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R209	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R210	1-236-427-11	NETWORK, RES 18K	
R212	1-236-427-11	NETWORK, RES 18K	
R214	1-239-039-11	RESISTOR, NETWORK 22K	
R215	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R218	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R219	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R220	1-216-001-00	METAL CHIP 10 5% 1/10W	
R222	1-236-427-11	NETWORK, RES 18K	
R223	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R224	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R225	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R226	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R301	1-236-413-11	NETWORK, RES 1.2K	
R303	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R304	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R305	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R306	1-216-097-00	METAL CHIP 100K 5% 1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV101	1-241-395-11	RES, ADJ, METAL GLAZE 10K	
RV102	1-241-395-11	RES, ADJ, METAL GLAZE 10K	

< SWITCH >

Ref. No.	Part No.	Description	Remark
SW101	1-572-085-11	SWITCH, LEAF (LIMIT)	

< CRYSTAL >

Ref. No.	Part No.	Description	Remark
X201	1-579-280-11	VIBRATOR, CRYSTAL 6.9344MH	
X202	1-579-216-11	VIBRATOR, CERAMIC 4MHz	

****

* 1-639-977-11 CD RST BOARD (FORMER TYPE)
****

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C1	1-126-925-11	ELECT 470uF 20 10V	
C2	1-126-933-11	ELECT 100uF 20 10V	
C3	1-126-933-11	ELECT 100uF 20 10V	
C4	1-126-933-11	ELECT 100uF 20 10V	
C5	1-126-933-11	ELECT 1uF 20 10V	
C6	1-126-933-11	ELECT 1uF 20 10V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN1	* 1-564-706-11	CONNECTOR PIN 4P	
CN2	* 1-573-149-11	CONNECTR PIN	
CN3	* 1-573-149-11	CONNECTR PIN	

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D1	8-719-912-20	DIODE 1SS120	
D2	8-719-912-20	DIODE 1SS120	
D3	8-719-912-20	DIODE 1SS120	
		< IC >	
IC1	8-759-821-93	IC LA5601	
IC2	8-759-916-12	IC SN74HC00AN	
		< TRANSISTOR >	
Q1	8-729-620-02	TRANSISTOR 2SA1115-EF	
Q2	8-729-620-05	TRANSISTOR 2SA2603-EF	
		< RESISTOR >	
R1	1-249-421-11	CARBON 2.2K 5% 1/4W	
R2	1-249-397-11	CARBON 22 5% 1/4W	
R3	1-249-421-11	CARBON 2.2K 5% 1/4W	
R4	1-249-433-11	CARBON 22K 5% 1/4W	
R5	1-249-405-11	CARBON 100 5% 1/4W	
R6	1-249-405-11	CARBON 100 5% 1/4W	
**			
*	1-638-308-11	LOADING BOARD	
		*************	
		< CONNECTOR >	
CN201	1-580-918-11	HOUSING, CONNECTOR 5P	
		< SWITCH >	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	
**			
*	A-4341-657-A	MAIN BOARD, COMPLETE (AEP, UK)	
*	A-4341-662-A	MAIN BOARD, COMPLETE (G, IT)	
		********************	
*	A-4341-658-A	PANEL BOARD, COMPLETE (AEP, UK)	
*	A-4341-664-A	PANEL BOARD, COMPLETE (G)	
*	A-4341-707-A	PANEL BOARD, COMPLETE (IT)	
		*********************	
*	1-638-882-11	JACK BOARD	
		**********	
*	1-638-883-11	PIN JACK BOARD	
		*************	

Ref. No.	Part No.	Description	Remark
*	1-638-884-11	VR BOARD	
		********	
*	4-944-202-01	HOLDER (FL)	
*	4-946-050-11	CUSHION (FL)	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
		< CAPACITOR >	
C1	1-126-925-11	ELECT 470uF 20% 10V	(NEW TYPE)
C2	1-126-933-11	ELECT 100uF 20% 16V	(NEW TYPE)
C3	1-126-933-11	ELECT 100uF 20% 16V	(NEW TYPE)
C4	1-126-933-11	ELECT 100uF 20% 16V	(NEW TYPE)
C5	1-164-346-11	CERAMIC CHIP 1uF 16V	(NEW TYPE)
C6	1-164-346-11	CERAMIC CHIP 1uF 16V	(NEW TYPE)
C101	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C102	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C103	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C104	1-126-157-11	ELECT 10uF 20% 16V	
C105	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C106	1-163-018-00	CERAMIC CHIP 0.0056uF 5% 50V	
C107	1-163-012-00	CERAMIC CHIP 0.0018uF 10% 50V	
C108	1-164-346-11	CERAMIC CHIP 1uF 16V	
C109	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(AEP, UK)
C109	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	(G, IT)
C110	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C151	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C152	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C153	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C154	1-126-157-11	ELECT 10uF 20% 16V	
C155	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C156	1-163-018-00	CERAMIC CHIP 0.0056uF 5% 50V	
C157	1-163-012-00	CERAMIC CHIP 0.0018uF 10% 50V	
C158	1-164-346-11	CERAMIC CHIP 1uF 16V	
C159	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(AEP, UK)
C159	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	(G, IT)
C160	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C203	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C204	1-164-222-11	CERAMIC CHIP 0.22uF 25V	
C205	1-164-492-11	CERAMIC CHIP 0.15uF 10% 16V	
C206	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C207	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	
C208	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C209	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C210	1-163-024-00	CERAMIC CHIP 0.018uF 10% 50V	
C211	1-164-232-11	CERAMIC CHIP 0.01uF 50V	

Ref.No.	Part No.	Description			Remark
C212	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C213	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C214	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C215	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C216	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V
C217	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C218	1-126-163-11	ELECT	4.7uF	20%	50V
C219	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C220	1-126-163-11	ELECT	4.7uF	20%	50V
C221	1-126-163-11	ELECT	4.7uF	20%	50V
C222	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C223	1-126-163-11	ELECT	4.7uF	20%	50V
C224	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C225	1-126-163-11	ELECT	4.7uF	20%	50V
C226	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C229	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C230	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C231	1-126-096-11	ELECT	10uF	20%	35V
C232	1-126-163-11	ELECT	4.7uF	20%	50V
C233	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C234	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C236	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C237	1-126-935-11	ELECT	470uF	20%	16V
C238	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C239	1-126-933-11	ELECT	100uF	20%	16V
C241	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C243	1-136-173-00	FILM	0.47uF	5%	50V
C244	1-136-173-00	FILM	0.47uF	5%	50V
C245	1-126-163-11	ELECT	4.7uF	20%	50V
C246	1-126-933-11	ELECT	100uF	20%	16V
C247	1-126-933-11	ELECT	100uF	20%	16V
C253	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C254	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C255	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C256	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C257	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C258	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C259	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C260	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C261	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C262	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C263	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C264	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C265	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C266	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V
C267	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C268	1-126-163-11	ELECT	4.7uF	20%	50V
C269	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C270	1-126-163-11	ELECT	4.7uF	20%	50V

Ref.No.	Part No.	Description			Remark
C271	1-126-163-11	ELECT	4.7uF	20%	50V
C272	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C273	1-126-163-11	ELECT	4.7uF	20%	50V
C274	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C275	1-126-163-11	ELECT	4.7uF	20%	50V
C276	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C278	1-126-967-11	ELECT	47uF	20%	50V
C279	1-126-967-11	ELECT	47uF	20%	50V
C280	1-126-948-11	ELECT	100uF	20%	35V
C281	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C282	1-126-948-11	ELECT	100uF	20%	35V
C285	1-126-937-11	ELECT	4700uF	20%	16V
C286	1-126-943-11	ELECT	2200uF	20%	25V
C287	1-126-301-11	ELECT	1uF	20%	50V
C288	1-126-096-11	ELECT	10uF	20%	35V
C289	1-124-589-11	ELECT	47uF	20%	16V
C290	1-124-477-11	ELECT	47uF	20%	25V
C291	1-124-589-11	ELECT	47uF	20%	16V
C292	1-124-589-11	ELECT	47uF	20%	16V
C295	1-126-096-11	ELECT	10uF	20%	35V
C296	1-126-096-11	ELECT	10uF	20%	35V
C297	1-126-096-11	ELECT	10uF	20%	35V
C301	1-126-925-11	ELECT	470uF	20%	10V
C302	1-126-925-11	ELECT	470uF	20%	10V
C303	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C306	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C307	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C311	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C312	1-126-157-11	ELECT	10uF	20%	16V
C313	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C314	1-125-486-11	DUBLE LAYERS	0.22F		5.5V
C315	1-164-346-11	CERAMIC CHIP	1uF		16V
C341	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C342	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C361	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C362	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C363	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C364	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C365	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C366	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C367	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C368	1-164-346-11	CERAMIC CHIP	1uF		16V
C369	1-126-933-11	ELECT	100uF	20%	16V
C370	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C371	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C372	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C373	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C374	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C381	1-163-038-00	CERAMIC CHIP	0.1uF		25V

MAIN PANEL JACK PIN JACK VR

Ref. No.	Part No.	Description			Remark
C382	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C383	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C384	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C391	1-126-157-11	ELECT	10uF	20%	16V
C392	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C395	1-126-157-11	ELECT	10uF	20%	16V
C396	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1101	1-163-117-11	CERAMIC CHIP	100PF	5%	50V (G, IT)
C1151	1-163-117-11	CERAMIC CHIP	100PF	5%	50V (G, IT)
C2201	1-164-346-11	CERAMIC CHIP	1uF		16V
C2202	1-164-346-11	CERAMIC CHIP	1uF		16V
C2203	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C2204	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C2205	1-164-346-11	CERAMIC CHIP	1uF		16V
C2206	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C2208	1-126-926-11	ELECT	1000uF	20%	10V
C2209	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C2210	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C2211	1-126-923-11	ELECT	220uF	20%	10V
C2212	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C2216	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C2217	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C2218	1-164-346-11	CERAMIC CHIP	1uF		16V
C2219	1-164-346-11	CERAMIC CHIP	1uF		16V
C2220	1-163-036-00	CERAMIC CHIP	0.068uF		50V
C2221	1-124-907-11	ELECT	10uF	20%	50V
C2222	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (G, IT)
C2223	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (G, IT)
C2251	1-164-346-11	CERAMIC CHIP	1uF		16V
C2252	1-164-346-11	CERAMIC CHIP	1uF		16V
C2253	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C2254	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C2256	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C2259	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C2260	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C2271	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C2272	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C2273	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C2274	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C2275	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C2276	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C2277	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C2278	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C2279	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C2280	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C2285	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C2286	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C2288	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C2289	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C2290	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C2291	1-126-947-91	ELECT	47uF	20%	35V
C2371	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C2372	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3301	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3302	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3303	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3304	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3305	1-126-933-11	ELECT	100uF	20%	16V
C3306	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3371	1-126-933-11	ELECT	100uF	20%	16V
C3372	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C3376	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C3381	1-126-933-11	ELECT	100uF	20%	16V
C3382	1-164-505-11	CERAMIC CHIP	2.2uF		16V

< CONNECTOR >

Ref. No.	Part No.	Description
CN1	* 1-573-107-11	CONNECTOR, PC BOARD (PLUG)
CN2	* 1-573-107-11	CONNECTOR, PC BOARD (PLUG)
CN4	* 1-573-107-11	CONNECTOR, PC BOARD (PLUG)
CN5	* 1-573-107-11	CONNECTOR, PC BOARD (PLUG)
CN7	* 1-573-107-11	CONNECTOR, PC BOARD (PLUG)
CN101	* 1-566-859-11	SOCKET, CONNECTOR 15P (SYSTEM CONTROL)
CN102	* 1-565-971-11	SOCKET, CONNECTOR(PC BOARD) 9P
CN103	* 1-565-968-11	PIN, CONNECTOR (PC BOARD) 9P
CN201	* 1-573-084-11	CONNECTOR, FPC (NON ZIF) 20P
CN202	* 1-573-084-11	CONNECTOR, FPC (NON ZIF) 20P
CN203	* 1-573-085-11	CONNECTOR, FPC (NON ZIF) 19P
CN204	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN205	* 1-564-714-11	PIN, CONNECTOR (SMALL TYPE) 12P
CN301	* 1-573-084-11	CONNECTOR, FPC (NON ZIF) 20P
CN302	* 1-573-084-11	CONNECTOR, FPC (NON ZIF) 20P
CN351	* 1-561-651-00	SOCKET, CONNECTOR 7P
CN352	1-569-132-11	PIN, CONNECTOR 7P
CN353	1-573-712-11	CONNECTOR, BOARD TO BOARD 8P
CN361	1-562-088-00	SOCKET, CONNECTOR 9P
CN362	1-560-943-00	PIN, CONNECTOR 9P

< DIODE >

Ref. No.	Part No.	Description		
D1	8-719-988-62	DIODE	1SS355	(NEW TYPE)
D2	8-719-988-62	DIODE	1SS355	(NEW TYPE)
D3	8-719-988-62	DIODE	1SS355	(NEW TYPE)
D201	8-719-988-62	DIODE	1SS355	
D202	8-719-988-62	DIODE	1SS355	
D203	8-719-988-62	DIODE	1SS355	

Ref. No.	Part No.	Description	Remark
D205	8-719-976-96	DIODE DTZ4.7C	
D281	8-719-210-33	DIODE EC10DS2	
D282	8-719-210-33	DIODE EC10DS2	
D283	8-719-977-81	DIODE DTZ33B	
D284	8-719-988-62	DIODE 1SS355	
D286	8-719-210-33	DIODE EC10DS2	
D287	8-719-210-33	DIODE EC10DS2	
D288	8-719-210-39	DIODE EC10QS-04	
D289	8-719-210-39	DIODE EC10QS-04	
D290	8-719-977-36	DIODE DTZ12B	
D291	8-719-988-62	DIODE 1SS355	
D292	8-719-977-07	DIODE DTZ6.2B	
D293	8-719-988-62	DIODE 1SS355	
D294	8-719-988-62	DIODE 1SS355	
D301	8-719-977-03	DIODE DTZ5.6B	
D302	8-719-977-03	DIODE DTZ5.6B	
D311	8-719-988-62	DIODE 1SS355	
D312	8-719-988-62	DIODE 1SS355	
D313	8-719-988-62	DIODE 1SS355	
D314	8-719-988-62	DIODE 1SS355	
D316	8-719-301-39	DIODE SEL2210S	
D317	8-719-301-39	DIODE SEL2210S	
D318	8-719-301-39	DIODE SEL2210S	
D319	8-719-301-39	DIODE SEL2210S	
D320	8-719-301-39	DIODE SEL2210S	
D321	8-719-301-39	DIODE SEL2210S	
D322	8-719-301-39	DIODE SEL2210S	
D323	8-719-301-39	DIODE SEL2210S	
D324	8-719-988-62	DIODE 1SS355	
D325	8-719-988-62	DIODE 1SS355	
D326	8-719-988-62	DIODE 1SS355	
D327	8-719-988-62	DIODE 1SS355	
D328	8-719-988-62	DIODE 1SS355	
D329	8-719-988-62	DIODE 1SS355	
D330	8-719-988-62	DIODE 1SS355	
D331	8-719-988-62	DIODE 1SS355	
D391	8-719-988-62	DIODE 1SS355	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL301	1-519-637-11	INDICATOR TUBE, FLUORESCENT	

< IC >

Ref. No.	Part No.	Description	Remark
IC1	8-759-821-93	IC LA5601 (NEW TYPE)	
IC101	8-759-981-95	IC RC4558S	
IC201	8-759-516-41	IC CD4052BCM	
IC202	8-759-516-41	IC CD4052BCM	
IC203	8-759-981-95	IC RC4558S	
IC204	8-759-516-47	IC CD4066BCM	
IC205	8-759-636-57	IC CXA1492Q	
IC206	8-759-981-95	IC RC4558S	
IC207	8-759-823-46	IC LA5603	
IC301	8-759-991-11	IC XR1091DCP	
IC302	8-759-516-41	IC CD4052BCM	
IC303	8-759-140-57	IC uPD4990AG	
IC304	8-759-500-31	IC X24C01P	
IC305	8-759-154-53	IC uPD78134GF-032-3B9	
IC306	8-759-512-44	IC SN755703	
IC307	8-759-512-44	IC SN755703	
IC308	8-749-922-36	IC GP1U50XB	
IC309	8-759-927-29	IC SN74HCU04ANS	
IC361	8-759-981-95	IC RC4558S	
IC362	8-759-636-55	IC M5218AFP	
IC395	8-759-820-62	IC LB1639	

< JACK >

Ref. No.	Part No.	Description	Remark
J101	1-565-320-11	JACK, PIN 6P (VIDEO/AUX, DAT)	
J361	1-562-837-21	JACK (MIX MIC)	
J362	1-562-837-21	JACK (HEADPHONES)	

< CHIP JUMPER >

Ref. No.	Part No.	Description	Remark
JW201	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW202	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW203	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW204	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW209	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW210	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW212	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW282	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW284	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW285	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW286	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW287	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW304	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW305	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW306	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW351	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW352	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW353	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW354	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW355	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW357	1-216-295-00	METAL CHIP 0 5% 1/10W	

< COIL >

Ref. No.	Part No.	Description	Remark
L2201	1-410-393-11	INDUCTOR, CHIP 100uH	
L2202	1-408-789-21	INDUCTOR, CHIP 100uH	
L2203	1-410-393-11	INDUCTOR, CHIP 100uH	

MAIN PANEL JACK PIN JACK VR

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-602-36	TRANSISTOR 2SA1602	(NEW TYPE)
Q2	8-729-602-21	TRANSISTOR 2SC4154-F	(NEW TYPE)
Q3	8-729-810-19	TRANSISTOR 2SC4396	(NEW TYPE)
Q4	8-729-810-19	TRANSISTOR 2SC4396	(NEW TYPE)
Q201	8-729-602-21	TRANSISTOR 2SC4154-F	
Q202	8-729-602-21	TRANSISTOR 2SC4154-F	
Q203	8-729-602-21	TRANSISTOR 2SC4154-F	
Q204	8-729-602-21	TRANSISTOR 2SC4154-F	
Q205	8-729-602-21	TRANSISTOR 2SC4154-F	
Q206	8-729-602-21	TRANSISTOR 2SC4154-F	
Q281	8-729-209-15	TRANSISTOR 2SD2012	
Q283	8-729-209-15	TRANSISTOR 2SD2012	
Q284	8-729-810-28	TRANSISTOR 2SC4398	
Q286	8-729-810-16	TRANSISTOR 2SA1678	
Q287	8-729-810-28	TRANSISTOR 2SC4398	
Q289	8-729-602-21	TRANSISTOR 2SC4154-F	
Q290	8-729-808-01	TRANSISTOR 2SD1622-S	
Q311	8-729-602-21	TRANSISTOR 2SC4154-F	
Q312	8-729-602-21	TRANSISTOR 2SC4154-F	
Q313	8-729-602-21	TRANSISTOR 2SC4154-F	
Q314	8-729-810-28	TRANSISTOR 2SC4398	
		< RESISTOR >	
R1	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(NEW TYPE)
R2	1-216-009-00	METAL CHIP 22 5% 1/10W	(NEW TYPE)
R3	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(NEW TYPE)
R4	1-216-081-00	METAL CHIP 22K 5% 1/10W	(NEW TYPE)
R5	1-216-073-00	METAL CHIP 10K 5% 1/10W	(NEW TYPE)
R101	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R102	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R103	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R104	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R105	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R106	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R107	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R108	1-216-037-00	METAL CHIP 330 5% 1/10W	
R109	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R110	1-216-295-00	METAL CHIP 0 5% 1/10W	
R151	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R152	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R153	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R154	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R155	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R156	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R157	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R158	1-216-037-00	METAL CHIP 330 5% 1/10W	
R159	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R160	1-216-295-00	METAL CHIP 0 5% 1/10W	
R181	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R182	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R183	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R184	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R185	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R186	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R187	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R188	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R189	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R190	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R191	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R192	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R193	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R194	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R195	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R196	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R197	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R198	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R199	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R201	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R202	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R203	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R205	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R207	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R208	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R209	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R210	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R211	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R212	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R213	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R214	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R215	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R216	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R217	1-216-025-00	METAL CHIP 100 5% 1/10W	
R218	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R219	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R220	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R221	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R222	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R223	1-216-025-00	METAL CHIP 100 5% 1/10W	
R224	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R251	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R252	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R253	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R255	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R257	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R258	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R259	1-216-089-00	METAL CHIP 47K 5% 1/10W	

MAIN **PANEL** **JACK** **PIN JACK** **VR**

Ref. No.	Part No.	Description			Remark
R260	1-216-073-00	METAL CHIP	10K	5%	1/10W
R261	1-216-073-00	METAL CHIP	10K	5%	1/10W
R262	1-216-073-00	METAL CHIP	10K	5%	1/10W
R263	1-216-073-00	METAL CHIP	10K	5%	1/10W
R264	1-216-073-00	METAL CHIP	10K	5%	1/10W
R265	1-216-049-00	METAL CHIP	1K	5%	1/10W
R266	1-216-089-00	METAL CHIP	47K	5%	1/10W
R267	1-216-025-00	METAL CHIP	100	5%	1/10W
R268	1-216-121-00	METAL CHIP	1M	5%	1/10W
R269	1-216-083-00	METAL CHIP	27K	5%	1/10W
R270	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R271	1-216-121-00	METAL CHIP	1M	5%	1/10W
R272	1-216-073-00	METAL CHIP	10K	5%	1/10W
R273	1-216-025-00	METAL CHIP	100	5%	1/10W
R274	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R275	1-216-073-00	METAL CHIP	10K	5%	1/10W
R276	1-216-073-00	METAL CHIP	10K	5%	1/10W (FORMER TYPE)
R277	1-216-049-00	METAL CHIP	1K	5%	1/10W
R281	1-216-049-00	METAL CHIP	1K	5%	1/10W
R282	1-216-049-00	METAL CHIP	1K	5%	1/10W
R283	1-216-049-00	METAL CHIP	1K	5%	1/10W
R284	1-216-049-00	METAL CHIP	1K	5%	1/10W
R285	1-216-001-00	METAL CHIP	10	5%	1/10W
R286	1-216-079-00	METAL CHIP	18K	5%	1/10W
R287	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R291	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R292	1-216-049-00	METAL CHIP	1K	5%	1/10W
R293	1-216-049-00	METAL CHIP	1K	5%	1/10W
R294	1-216-049-00	METAL CHIP	1K	5%	1/10W
R295	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R298	1-216-025-00	METAL CHIP	100	5%	1/10W
R299	1-216-049-00	METAL CHIP	1K	5%	1/10W
R300	1-216-077-00	METAL CHIP	15K	5%	1/10W
R301	1-216-017-00	METAL CHIP	47	5%	1/10W
R302	1-216-017-00	METAL CHIP	47	5%	1/10W
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W
R305	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R306	1-216-049-00	METAL CHIP	1K	5%	1/10W
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W (AEP, UK)
R313	1-216-097-00	METAL CHIP	100K	5%	1/10W
R314	1-216-073-00	METAL CHIP	10K	5%	1/10W (G, IT)
R315	1-216-097-00	METAL CHIP	100K	5%	1/10W
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R317	1-216-097-00	METAL CHIP	100K	5%	1/10W
R318	1-216-073-00	METAL CHIP	10K	5%	1/10W
R319	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R320	1-216-073-00	METAL CHIP	10K	5%	1/10W
R321	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R322	1-216-041-00	METAL CHIP	470	5%	1/10W
R323	1-216-045-00	METAL CHIP	680	5%	1/10W
R324	1-216-049-00	METAL CHIP	1K	5%	1/10W
R325	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R326	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R327	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R328	1-216-041-00	METAL CHIP	470	5%	1/10W
R329	1-216-045-00	METAL CHIP	680	5%	1/10W
R330	1-216-049-00	METAL CHIP	1K	5%	1/10W
R331	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R332	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R333	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R334	1-216-041-00	METAL CHIP	470	5%	1/10W
R335	1-216-045-00	METAL CHIP	680	5%	1/10W
R336	1-216-049-00	METAL CHIP	1K	5%	1/10W
R337	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R338	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R340	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R341	1-216-041-00	METAL CHIP	470	5%	1/10W
R342	1-216-045-00	METAL CHIP	680	5%	1/10W
R343	1-216-049-00	METAL CHIP	1K	5%	1/10W
R344	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R345	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R346	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R347	1-216-097-00	METAL CHIP	100K	5%	1/10W
R348	1-216-097-00	METAL CHIP	100K	5%	1/10W
R349	1-216-097-00	METAL CHIP	100K	5%	1/10W
R350	1-216-049-00	METAL CHIP	1K	5%	1/10W
R351	1-216-049-00	METAL CHIP	1K	5%	1/10W
R352	1-216-037-00	METAL CHIP	330	5%	1/10W
R353	1-216-037-00	METAL CHIP	330	5%	1/10W
R354	1-216-029-00	METAL CHIP	150	5%	1/10W
R355	1-216-037-00	METAL CHIP	330	5%	1/10W
R356	1-216-089-00	METAL CHIP	47K	5%	1/10W
R357	1-216-073-00	METAL CHIP	10K	5%	1/10W
R358	1-216-073-00	METAL CHIP	10K	5%	1/10W
R360	1-216-073-00	METAL CHIP	10K	5%	1/10W
R361	1-216-073-00	METAL CHIP	10K	5%	1/10W
R362	1-216-037-00	METAL CHIP	330	5%	1/10W
R363	1-216-031-00	METAL CHIP	180	5%	1/10W
R364	1-216-097-00	METAL CHIP	100K	5%	1/10W
R365	1-216-081-00	METAL CHIP	22K	5%	1/10W
R366	1-216-089-00	METAL CHIP	47K	5%	1/10W
R367	1-216-089-00	METAL CHIP	47K	5%	1/10W

MAIN PANEL JACK PIN JACK VR POWER

Ref. No.	Part No.	Description				Remark
R368	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R369	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R370	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R371	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R372	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R373	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R374	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R375	1-216-017-00	METAL CHIP	47	5%	1/10W	
R376	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R381	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R382	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R383	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R384	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R385	1-216-017-00	METAL CHIP	47	5%	1/10W	
R386	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R392	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R393	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R395	1-216-035-00	METAL CHIP	270	5%	1/10W	
R396	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R397	1-216-037-00	METAL CHIP	330	5%	1/10W	
R1001	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R1051	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R2201	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R2202	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R2203	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R2204	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R2205	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R2206	1-216-037-00	METAL CHIP	330	5%	1/10W	
R2251	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R2252	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R2253	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R2254	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R2255	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R2256	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R3307	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R3308	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R3310	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R3371	1-216-025-00	METAL CHIP	100	5%	1/10W	
R3381	1-216-025-00	METAL CHIP	100	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV361	1-241-140-11	RES, VAR, CARBON 10K (MIC LEVEL)
RV395	1-241-418-11	RES, VAR, CARBON 10K (VOLUME)

< SWITCH >

Ref. No.	Part No.	Description
S311	1-572-184-11	SWITCH, KEYBOARD (FUNCTION)
S312	1-572-184-11	SWITCH, KEYBOARD (RESET)
S313	1-572-184-11	SWITCH, KEYBOARD (EQ ON/OFF)
S314	1-572-184-11	SWITCH, KEYBOARD (SURROUND)
S315	1-572-184-11	SWITCH, KEYBOARD (DBFB)
S316	1-572-184-11	SWITCH, KEYBOARD (WAKE UP)
S317	1-572-184-11	SWITCH, KEYBOARD (OPEN/CLOSE)
S318	1-572-184-11	SWITCH, KEYBOARD (■)
S319	1-572-184-11	SWITCH, KEYBOARD (▷ ❚❚)
S320	1-572-184-11	SWITCH, KEYBOARD (▶▶ ▷▷❘)
S321	1-572-184-11	SWITCH, KEYBOARD (❘◁◁ ◀◀)
S322	1-572-184-11	SWITCH, KEYBOARD (EDIT/TIME FADE)
S323	1-572-184-11	SWITCH, KEYBOARD (NEXT/MEMORY)
S324	1-572-184-11	SWITCH, KEYBOARD (TIMER SET)
S325	1-572-184-11	SWITCH, KEYBOARD (CONTINUE)
S326	1-572-184-11	SWITCH, KEYBOARD (SHUFFLE)
S327	1-572-184-11	SWITCH, KEYBOARD (PROGRAM)
S328	1-572-184-11	SWITCH, KEYBOARD (CHECK)
S329	1-572-184-11	SWITCH, KEYBOARD (SYSTEM POWER ON/OFF)
S330	1-572-184-11	SWITCH, KEYBOARD (RESET/TUNING)
S331	1-572-184-11	SWITCH, KEYBOARD (+)
S332	1-572-184-11	SWITCH, KEYBOARD (BAND)
S333	1-572-184-11	SWITCH, KEYBOARD (-)
S334	1-572-184-11	SWITCH, KEYBOARD (CLOCK SET)
S335	1-572-184-11	SWITCH, KEYBOARD (TIMER SET)
S336	1-572-184-11	SWITCH, KEYBOARD (RESET)

< TERMINAL BOARD >

Ref. No.	Part No.	Description
TB101	* 1-537-138-31	TERMINAL BOARD (ANT)

< CLAMP >

Ref. No.	Part No.	Description
TP105	* 3-683-631-01	CLAMP

< CRYSTAL >

Ref. No.	Part No.	Description
X301	1-527-997-21	VIBRATOR, CRYSTAL
X302	Y 1-577-364-11	VIBRATOR, CERAMIC 12MHz

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* A-4341-652-A POWER BOARD, COMPLETE (AEP.IT)
* A-4341-661-A POWER BOARD, COMPLETE (G)
* A-4341-653-A POWER BOARD, COMPLETE (UK)
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* 1-533-213-31 HOLDER, FUSE

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C801	1-124-907-11	ELECT	10uF	20%	50V	
C802	1-162-294-31	CERAMIC	0.001uF	10%	50V	(AEP, UK)
C803	1-126-233-11	ELECT	22uF	20%	50V	

POWER

Ref. No.	Part No.	Description			Remark
C804	1-164-159-11	CERAMIC	0.1uF		50V
C805	1-164-159-11	CERAMIC	0.1uF		50V
C806	1-102-114-00	CERAMIC	470PF	10%	50V (G, IT)
C807	1-164-159-11	CERAMIC	0.1uF		50V (G, IT)
C851	1-124-907-11	ELECT	10uF	20%	50V
C852	1-162-294-31	CERAMIC	0.001uF	10%	50V (AEP, UK)
C853	1-126-233-11	ELECT	22uF	20%	50V
C854	1-164-159-11	CERAMIC	0.1uF		50V
C855	1-164-159-11	CERAMIC	0.1uF		50V
C856	1-102-114-00	CERAMIC	470PF	10%	50V (G, IT)
C857	1-164-159-11	CERAMIC	0.1uF		50V (G, IT)
C873	1-126-233-11	ELECT	22uF	20%	50V
C874	1-124-910-11	ELECT	47uF	20%	50V
C875	1-124-907-11	ELECT	10uF	20%	50V
C876	1-124-907-11	ELECT	10uF	20%	50V
C877	1-124-907-11	ELECT	10uF	20%	50V
C878	1-124-910-11	ELECT	47uF	20%	50V
C879	1-124-910-11	ELECT	47uF	20%	50V
C880	1-124-910-11	ELECT	47uF	20%	50V
C901	1-124-618-11	ELECT	2200uF	20%	35V
C902	1-124-618-11	ELECT	2200uF	20%	35V
C903	1-136-850-11	FILM	0.1uF	10%	63V
C904	1-136-850-11	FILM	0.1uF	10%	63V
C905	1-164-159-11	CERAMIC	0.1uF		50V
C906	1-164-159-11	CERAMIC	0.1uF		50V
C8002	1-162-294-31	CERAMIC	0.001uF	10%	50V (G, IT)
C8030	1-164-159-11	CERAMIC	0.1uF		50V
C9001	1-136-850-11	FILM	0.1uF	10%	63V
C9002	1-101-004-00	CERAMIC	0.01uF	10%	50V (G, IT)

< BREAKER >

Ref. No.	Part No.	Description
CB801	1-532-564-00	BREAKER, CIRCUIT 2.2A
CB851	1-532-564-00	BREAKER, CIRCUIT 2.2A

< CONNECTOR >

Ref. No.	Part No.	Description
CN801	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN901	⚠1-526-931-11	INLET, AC

< DIODE >

Ref. No.	Part No.	Description	
D801	8-719-912-20	DIODE	1SS120
D909	8-719-312-09	DIODE	RBA-402

< IC >

Ref. No.	Part No.	Description	
IC801	8-749-920-13	IC	STK4132MK2

< IC LINK >

Ref. No.	Part No.	Description
ICP951	⚠1-532-846-21	LINK, IC
ICP952	⚠1-532-846-21	LINK, IC

< COIL >

Ref. No.	Part No.	Description
L901	⚠1-410-397-21	FERRITE BEED INDUCTOR (G, IT)

< TRANSISTOR >

Ref. No.	Part No.	Description	
Q801	8-729-900-80	TRANSISTOR	DTC114ES

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R801	1-249-417-11	CARBON	1K	5%	1/4W
R802	1-249-438-11	CARBON	56K	5%	1/4W
R803	1-249-418-11	CARBON	1.2K	5%	1/4W
R804	1-249-438-11	CARBON	56K	5%	1/4W
R805	1-249-389-11	CARBON	4.7	5%	1/4W
R807	1-249-389-11	CARBON	4.7	5%	1/4W (G, IT)
R851	1-249-417-11	CARBON	1K	5%	1/4W
R852	1-249-438-11	CARBON	56K	5%	1/4W
R853	1-249-418-11	CARBON	1.2K	5%	1/4W
R854	1-249-438-11	CARBON	56K	5%	1/4W
R855	1-249-389-11	CARBON	4.7	5%	1/4W
R856	1-249-417-11	CARBON	1K	5%	1/4W
R857	1-249-389-11	CARBON	4.7	5%	1/4W (G, IT)
R871	1-249-440-11	CARBON	82K	5%	1/4W
R872	1-249-437-11	CARBON	47K	5%	1/4W
R873	1-249-429-11	CARBON	10K	5%	1/4W
R874	1-247-883-00	CARBON	150K	5%	1/4W
R875	1-249-421-11	CARBON	2.2K	5%	1/4W
R876	1-249-421-11	CARBON	2.2K	5%	1/4W
R877	⚠1-212-881-11	FUSIBLE	100	5%	1/4W F
R878	1-249-417-11	CARBON	1K	5%	1/4W
R879	1-249-417-11	CARBON	1K	5%	1/4W
R880	⚠1-212-881-11	FUSIBLE	100	5%	1/4W F
R881	1-249-421-11	CARBON	2.2K	5%	1/4W
R882	1-249-421-11	CARBON	2.2K	5%	1/4W
R883	⚠1-212-881-11	FUSIBLE	100	5%	1/4W F
R902	⚠1-212-942-00	FUSIBLE	2.2	5%	1/2W F
R8001	1-249-438-11	CARBON	56K	5%	1/4W
R8501	1-249-438-11	CARBON	56K	5%	1/4W
R9001	⚠1-212-942-00	FUSIBLE	2.2	5%	1/2W F

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

POWER TCB011

Ref. No.	Part No.	Description	Remark
R9002	⚠1-212-881-11	FUSIBLE 100 5%	1/4W F

< TERMINAL BOARD >

Ref. No.	Part No.	Description	Remark
TB801	* 1-537-240-21	TERMINAL BOARD (CHECKER PIN)	(AEP, IT, UK)
TB801	* 1-537-156-21	TERMINAL BOARD (SPEAKER)	(G)

****

* A-4303-343-A TCB011 BOARD, COMPLETE (AEP, UK)
* A-4303-344-A TCB011 BOARD, COMPLETE (G, IT)
****

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C1	1-124-120-11	ELECT 220uF 20%	25V
C2	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C3	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C4	1-163-038-00	CERAMIC CHIP 0.1uF	25V (G, IT)
C5	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C6	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C7	1-163-038-00	CERAMIC CHIP 0.1uF	25V (G, IT)
C8	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C9	1-163-012-00	CERAMIC CHIP 0.0018uF	50V
C10	1-163-011-11	CERAMIC CHIP 0.0015uF 10%	50V
C21	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
C22	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
C23	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C24	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C25	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C26	1-164-346-11	CERAMIC CHIP 1.0uF	16V
C27	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C29	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C31	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C32	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C33	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C34	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C35	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C36	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C51	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C52	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C53	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C54	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C55	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (AEP, UK)
C55	1-163-135-00	CERAMIC CHIP 560PF 5%	50V (G, IT)
C56	1-163-117-00	CERAMIC CHIP 100PF 5%	50V (G, IT)
C57	1-164-346-11	CERAMIC CHIP 1.0uF	16V
C58	1-164-346-11	CERAMIC CHIP 1.0uF	16V
C59	1-164-346-11	CERAMIC CHIP 1.0uF	16V
C60	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C61	1-163-022-00	CERAMIC CHIP 0.012uF 10%	50V
C62	1-163-022-00	CERAMIC CHIP 0.012uF 10%	50V
C63	1-164-346-11	CERAMIC CHIP 1.0uF	16V
C64	1-164-346-11	CERAMIC CHIP 1.0uF	16V
C65	1-164-346-11	CERAMIC CHIP 1.0uF	16V
C66	1-164-346-11	CERAMIC CHIP 1.0uF	16V
C69	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C70	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C71	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C72	1-124-120-11	ELECT 220uF 20%	25V
C73	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C74	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C75	1-126-157-11	ELECT 10uF 20%	16V
C76	1-126-101-11	ELECT 100uF 20%	16V
C79	1-126-157-11	ELECT 10uF 20%	16V
C80	1-124-472-11	ELECT 470uF 20%	10V
C81	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C82	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C83	1-164-232-11	CERAMIC CHIP 0.01uF	50V (G, IT)

< FILTER >

Ref. No.	Part No.	Description	Remark
CF1	1-567-389-11	FILTER, CERAMIC	
CF2	1-567-389-11	FILTER, CERAMIC	(G, IT)
CF51	1-567-389-11	FILTER, CERAMIC	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN1	1-573-105-11	CONNECTOR, PC BOARD (RECEPTACLE)	
CN2	1-573-105-11	CONNECTOR, PC BOARD (RECEPTACLE)	
CN3	1-573-105-11	CONNECTOR, PC BOARD (RECEPTACLE)	
CN4	1-573-105-11	CONNECTOR, PC BOARD (RECEPTACLE)	
CN5	1-573-105-11	CONNECTOR, PC BOARD (RECEPTACLE)	

< DIODE >

Ref. No.	Part No.	Description	Remark
D21	8-719-977-03	DIODE DTZ5.6B	
D51	8-719-988-62	DIODE 1SS355	

< FRONT END >

Ref. No.	Part No.	Description	Remark
FE1	1-463-957-11	FRONT END (FM 4 GANG)	(G, IT)
FE1	1-465-673-11	FRONT END (2 BAND)	(AEP, UK)
FE2	1-239-030-11	ENCAPSULATED COMPONENT (MW)	
FE3	1-239-049-11	ENCAPSULATED COMPONENT (LW)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

TCB011

Ref. No.	Part No.	Description	Remark
		< FILTER >	
FL51	1-239-029-11	ENCAPSULATED COMPONENT	(G, IT)
		< IC >	
IC21	8-759-821-43	IC LC7218M-TP	
IC51	8-759-823-68	IC LA1851NM-TP1	
		< TRANSFORMER >	
IFT51	1-404-954-11	TRANSFORMER, DISCRIMINATOR	
IFT52	1-404-713-11	TRANSFORMER, IF	
		< CHIP JUMPER >	
JW1	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W	(AEP, UK)
JW4	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW5	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW7	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L1	1-408-793-21	INDUCTOR, CHIP 220uH	
L51	1-408-798-00	CHIP INDUCTOR 1mH	
		< LPF >	
LPF51	1-235-221-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-804-72	TRANSISTOR 2SC2814-F4	
Q2	8-729-804-72	TRANSISTOR 2SC2814-F4	(G, IT)
Q3	8-729-810-16	TRANSISTOR 2SA1678	
Q4	8-729-602-36	TRANSISTOR 2SA1602	
Q5	8-729-810-28	TRANSISTOR 2SC4398	
Q6	8-729-602-36	TRANSISTOR 2SA1602	
Q7	8-729-810-28	TRANSISTOR 2SC4398	
Q21	8-729-602-21	TRANSISTOR 2SC4154-F	
Q22	8-729-232-71	TRANSISTOR 2SK208GR3	
Q23	8-729-232-59	TRANSISTOR 2SC4666B	
Q24	8-729-232-71	TRANSISTOR 2SK208GR3	
Q25	8-729-232-59	TRANSISTOR 2SC4666B	
Q51	8-729-602-21	TRANSISTOR 2SC4154-F	
Q52	8-729-602-21	TRANSISTOR 2SC4154-F	
Q53	8-729-810-28	TRANSISTOR 2SC4398	
		< RESISTOR >	
R1	1-216-037-00	METAL CHIP 330 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R2	1-216-037-00	METAL CHIP 330 5% 1/10W	
R3	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R4	1-216-037-00	METAL CHIP 330 5% 1/10W	
R5	1-216-109-00	METAL CHIP 330K 5% 1/10W	(G, IT)
R6	1-216-037-00	METAL CHIP 330 5% 1/10W	(G, IT)
R7	1-216-025-00	METAL CHIP 100 5% 1/10W	
R8	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R9	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R10	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R11	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R12	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R13	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R14	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R15	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R16	1-216-089-00	METAL CHIP 47K 5% 1/10W	(AEP, UK)
R21	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R22	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R24	1-216-025-00	METAL CHIP 100 5% 1/10W	
R25	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R26	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R27	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R28	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R29	1-216-025-00	METAL CHIP 100 5% 1/10W	
R30	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R31	1-216-043-00	METAL CHIP 560 5% 1/10W	
R32	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R33	1-216-035-00	METAL CHIP 270 5% 1/10W	
R34	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R35	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R36	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R37	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R38	1-216-025-00	METAL CHIP 100 5% 1/10W	
R39	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R40	1-216-043-00	METAL CHIP 560 5% 1/10W	
R41	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R42	1-216-035-00	METAL CHIP 270 5% 1/10W	
R43	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R44	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R45	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R46	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R51	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R52	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R53	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R54	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	

TCB011

Ref. No.	Part No.	Description	Remark
R55	1-216-075-00	METAL CHIP 12K 5% 1/10W	(AEP, UK)
R56	1-216-075-00	METAL CHIP 12K 5% 1/10W	(G, IT)
R57	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R58	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	
R59	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R60	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R61	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R62	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R63	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R64	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R65	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R66	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R67	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R68	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R69	1-216-025-00	METAL CHIP 100 5% 1/10W	
R70	1-216-025-00	METAL CHIP 100 5% 1/10W	
R71	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R72	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R73	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R74	1-216-013-00	METAL CHIP 33 5% 1/10W	
R75	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R79	1-216-049-00	METAL CHIP 1K 5% 1/10W	(AEP, UK)
R79	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	(G, IT)

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV51	1-238-601-11	RES, ADJ, CARBON 22K	
RV52	1-238-601-11	RES, ADJ, CARBON 22K	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
TP51	* 1-564-336-00	PIN, CONNECTOR 2P	(AEP, UK)
TP51	* 1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P	(G, IT)

< CRYSTAL >

Ref. No.	Part No.	Description	Remark
X21	1-577-126-11	VIBRATOR, CRYSTAL	
X51	1-577-075-11	OSCILLATOR, CERAMIC 456kHz	

****

MISCELLANEOUS

****

Ref. No.	Part No.	Description	Remark
5	1-590-907-11	WIRE, FLAT TYPE (20 CORE)	
6	1-590-908-11	WIRE, FLAT TYPE (20 CORE)	
52	1-590-906-11	WIRE, FLAT TYPE (19 CORE)	
59	1-690-035-11	WIRE, FLAT TYPE (19 CORE)	
120	1-590-530-11	WIRE, FLAT TYPE	
156	⚠ 8-848-144-11	DEVICE, OPTICAL KSS-240A	
157	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
F901	⚠ 1-532-078-00	FUSE, TIME-LAG T1A	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M291	A-4608-362-A	MOTOR (L) ASSY	
T1	⚠ 1-450-412-11	TRANSFORMER, POWER	

****

HARDWARE LIST

Ref. No.	Part No.	Description
# 1	7-621-255-25	SCREW +PTT 2X4 (S)
# 2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
# 3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
# 4	7-682-547-04	SCREW +BVTT 3X6 (S)
# 5	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3
# 6	7-685-659-79	SCREW +BVTP 4X8 TYPE2 IT-3
# 7	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT
# 8	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
# 9	7-621-775-10	SCREW +B 2.6X4
#10	7-624-105-04	STOP RING 2.3, TYPE -E
#11	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S
#12	7-621-255-15	SCREW +P 2X3
#13	7-682-947-01	SCREW +PSW 3X6 (FORMER TYPE)
#14	7-682-547-09	SCREW +B 3X6 (FORMER TYPE)
#15	7-685-872-01	SCREW +BVTT 3X8

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Sony Corporation
Audio Group

English
91F1858-1
Printed in Japan

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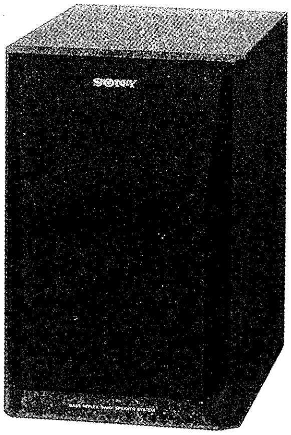
Published by Customer Relations and Service Group

SS-H1600

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model



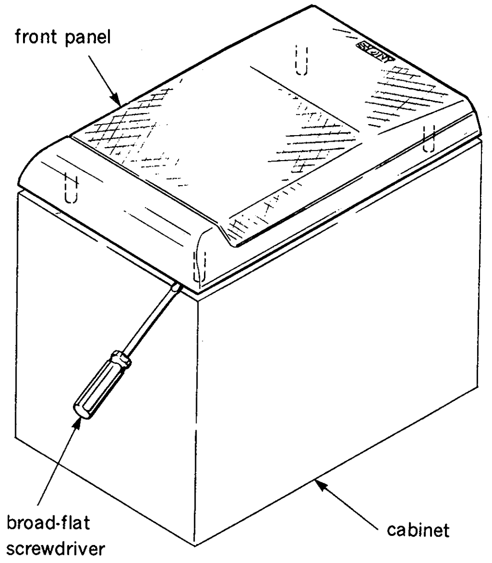
SPECIFICATIONS

Speaker system	(US model) 2-way (Canadian, AEP, E models) 3-way
Speaker units	(US model) Woofer: 13cm($5^{1}/_{8}$in.)cone type Tweeter: 5cm(2 in.)cone type (Canadian, AEP, E models) Woofer: 13cm($5^{1}/_{8}$in.)cone type Tweeter: 5cm(2 in.)cone type Super Tweeter: 2cm($^{13}/_{16}$in.) dome type
Power handling capacity	(US model) Maximum input power 50W (Canadian, AEP, E models) Maximum input power 60W
Sensitivity	88dB/W/m
Effective frequency range	65-20,000 Hz
Rated impedance	6 ohms
Dimensions	Approx. 165x250x230mm(w/h/d) ($6^{1}/_{2}$ x $9^{7}/_{8}$ x $9^{1}/_{8}$ in.)
Weight	Approx. 2.6 kg per speaker (5 lb 12 oz)

Design and specifications subject to change without notice.

1. FRONT PANEL REMOVAL

Note : Be careful not to scratch the cabinet.

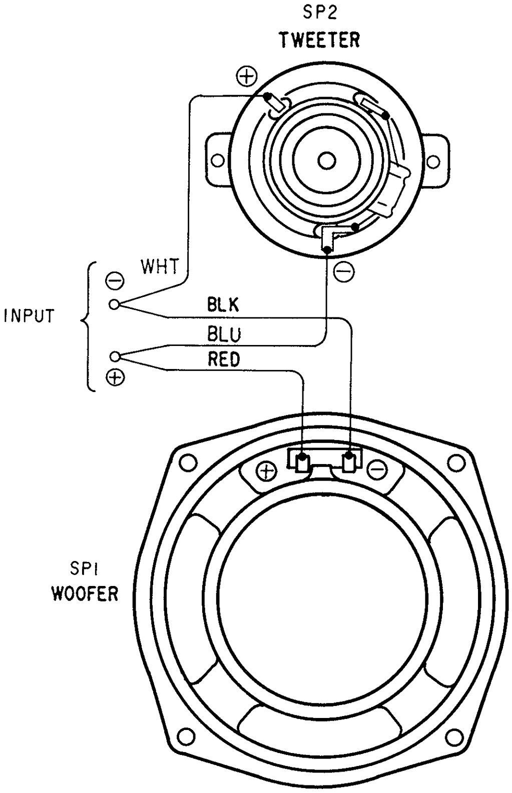


SPEAKER SYSTEM

SONY®

2. WIRING DIAGRAM

(US model)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⊕
⊖
WHT
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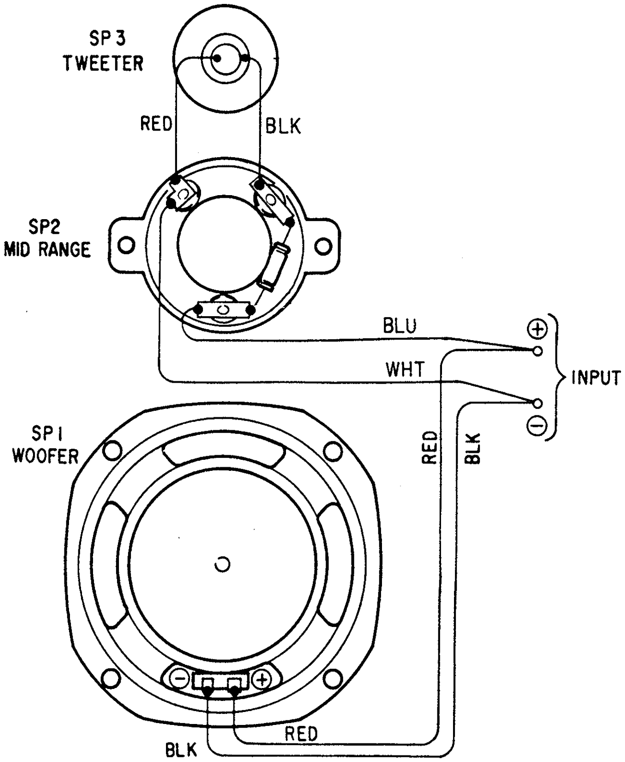
BLK
BLU
RED
⊕
⊕
⊖
SP1
WOOFER

(Canadian, AEP, E models)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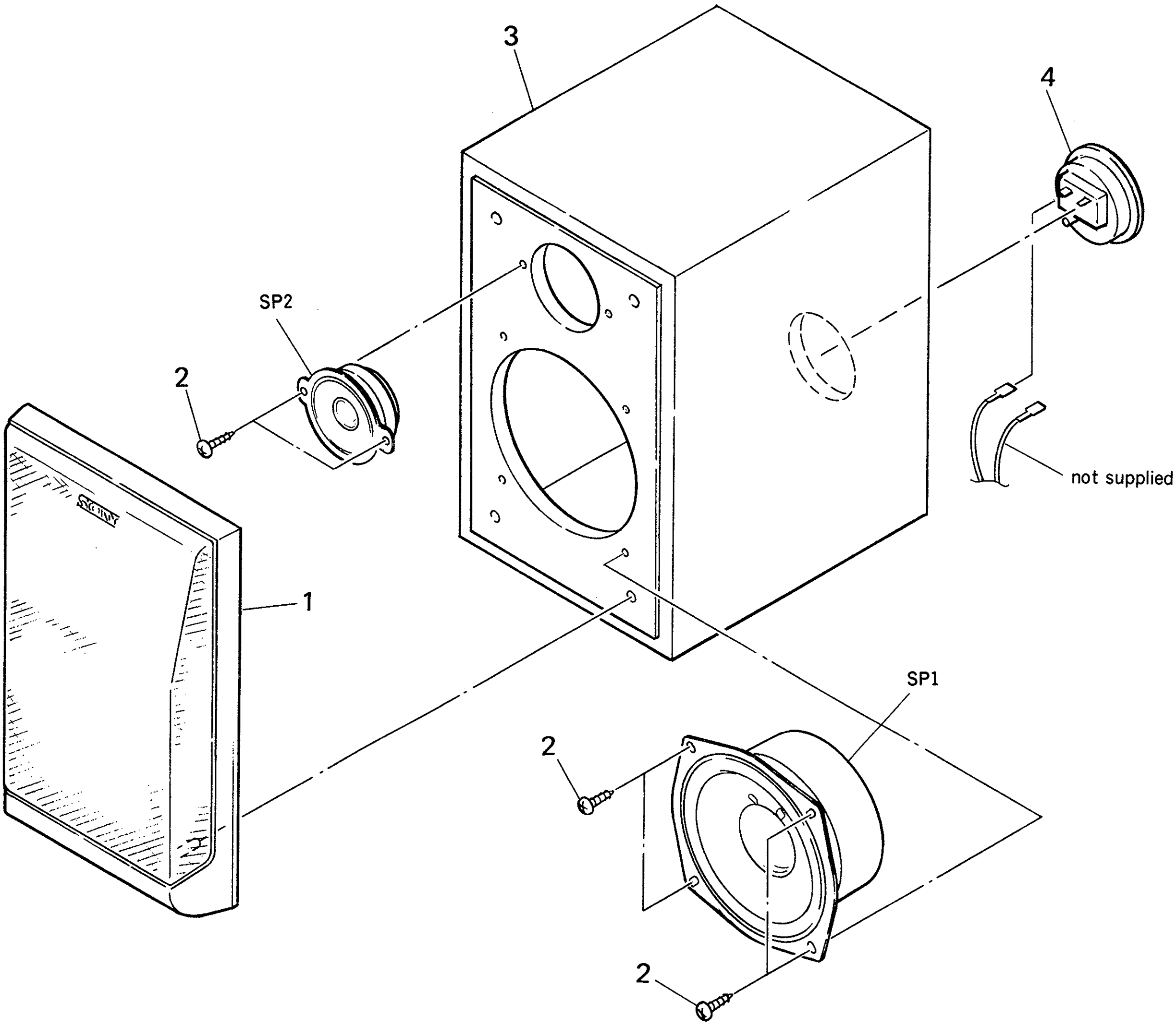
TWEETER
RED
BLK
SP2
MID RANGE
BLU
⊕
WHT
INPUT
⊖
SP1
WOOFER
RED
BLK
⊖
⊕
RED
BLK

3. EXPLODED VIEW AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color

(US model)



Ref.No	Part No.	Description	Remarks
1	X-4941-290-1	PANEL ASSY, FRONT	
2	4-874-614-11	SCREW (4) (3.5×14), TAPPING	
3	X-4941-289-1	CABINET ASSY, SPEAKER	

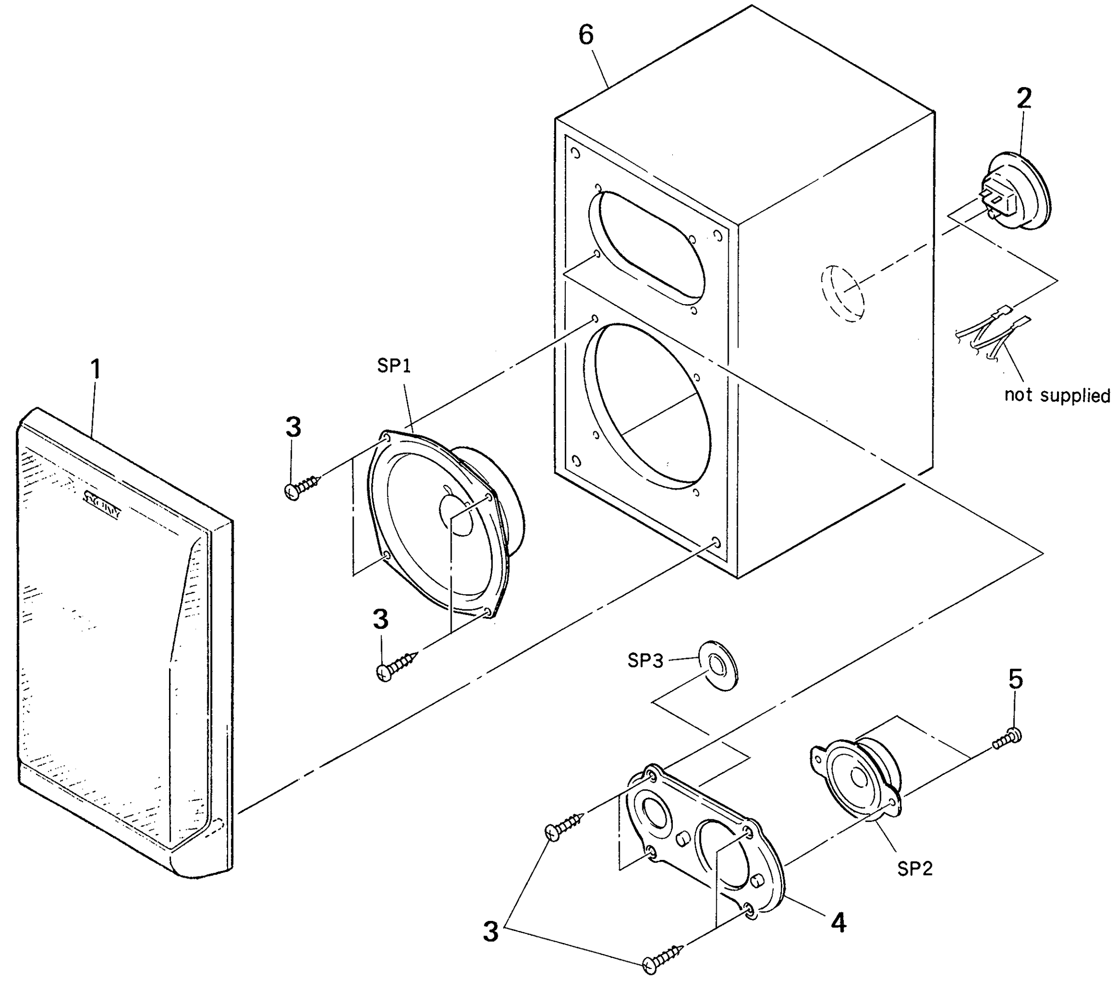
Ref.No	Part No.	Description	Remarks
4	1-537-145-11	TERMINAL BOARD (SPEAKER)	
SP1	1-544-428-11	SPEAKER (12CM)	
SP2	1-544-262-11	SPEAKER (5CM)	
		ACCESSORY & PACKING MATERIALS ************************	
	4-920-151-01	SHEET, PROTECTION	
	*4-944-059-01	CUSHION	

3. EXPLODED VIEW AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color

(Canadian, AEP, E models)



Ref.No	Part No.	Description	Remarks
1	X-4941-312-2	PANEL ASSY, FRONT	
2	1-537-145-11	TERMINAL BOARD (SPEAKER)	
3	4-874-614-11	SCREW +BVTP3.5×14	
4	*X-4941-441-1	FRAME ASSY, TW	
5	7-685-646-79	SCREW +BVTP3×8 TYPE2 SLIT	

Ref.No	Part No.	Description	Remarks
6	X-4941-313-2	CABINET ASSY, SPEAKER (Canadian, AEP, E)	
6	X-4941-423-2	CABINET ASSY, SPEAKER (Germany)	
SP1	1-544-445-11	SPEAKER (12CM)	
SP2	1-544-446-11	SPEAKER (5CM)	
SP3	1-544-235-11	SPEAKER (2CM)	
		ACCESSORY & PACKING MATERIALS ***********************	
	1-575-495-11	CORD, SPEAKER (AEP, Germany)	
	3-753-187-11	MANUAL, INSTRUCTION (AEP, Germany)	
	4-920-151-01	SHEET, PROTECTION	
	*4-944-059-01	CUSHION	

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